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Term:

11 not (110 or 19)

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<u>L11</u>	11 not (110 or 19)	41	<u>L11</u>
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<u>L1</u>	fumonisin	80	<u>L1</u>

END OF SEARCH HISTORY

=> d his

(FILE 'HOME' ENTERED AT 15:20:51 ON 07 MAY 2002)

FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 15:21:17 ON 07 MAY 2002

L1 3475 S FUMONISIN?
L2 428 S SPHINGOLIPID (P) L1
L3 99 S L1 AND 1960-1991/PY
L4 55 DUP REM L3 (44 DUPLICATES REMOVED)
L5 37 S FUMONISIN B1 AND L4
L6 37 S (FUMONISIN B1) AND L4
L7 12467349 S ADMIN? OR TOPICAL? OR ORAL? OR PATIENT? OR CONSUM? OR
INJECT?
L8 18 S L7 (P) L4
L9 18 DUP REM L8 (0 DUPLICATES REMOVED)
L10 37 DUP REM L6 (0 DUPLICATES REMOVED)

=>

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L5: Entry 1 of 7

File: USPT

Nov 21, 2000

DOCUMENT-IDENTIFIER: US 6150415 A

TITLE: Epoxide hydrolase complexes and methods therewith

Detailed Description Paragraph Right (41):

Additionally, inhibiting the soluble epoxide hydrolase of plants can interfere with formation of plant cutin and thus can accelerate penetration of herbicides and other plant growth regulators. When using epoxide hydrolase inhibitors to accelerate or enhance herbicide action or to reduce herbicide resistance, we contemplate application along with an herbicide. Formulations with the epoxide hydrolase inhibitor and herbicides can be prepared for foliage or root uptake. Further, mycotoxins produced by fungi can be used to increase pathogenesis by destroying cells and to protect the fungal food source. These materials can be highly toxic to humans, domestic animals, and crop plants. For example, *Alternaria alternata* f. sp. *lycopersici* is a fungal pathogen that causes the *Alternaria* stem canker disease of tomato. During disease development and in liquid culture, the pathogen secretes host-specific toxins (AAL toxins) which, in purified form, elicit cell death patterns characteristic of the stem canker. The ability of the pathogen to infect leaves, stems, and green fruit of tomato is limited to genotypes that are homozygous for the recessive allele (asc/asc) of the Asc gene. The Asc gene also regulates toxin sensitivity; thus the toxins function as chemical determinants of the stem canker disease. Moreover, AAL toxins, which are members of the same class of sphinganine analog or mycotoxins as fumonisins, inhibit ceramide synthase in rat hepatocytes and induce apoptosis in monkey kidney cells. Unlike the case with fumonisins, the effects of chronic exposure of AAL toxins to animal health are still unresolved. The first of the AAL toxins (TA) was characterized in 1981 and more recently new isomeric toxins were purified and characterized. The presence of one pair of vicinal diols free or esterified, in the structure of all the AAL toxins suggests the possible involvement of an epoxide hydrolase (EH) in their synthesis. This hypothetical mechanism is supported by the fact that one of the oxygen atoms of the diol, came from direct incorporation of atmospheric oxygen and the other came from water.

6127518

5518 879
5232 837

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L5: Entry 4 of 7

File: USPT

Nov 3, 1998

DOCUMENT-IDENTIFIER: US 5830916 A

TITLE: Inhibitor of ceramidase

Drawing Description Paragraph Right (7):

FIG. 7. Effects of fumonisin B1 on growth suppression by D-e-MAPP. HL-60 cells were treated with either vehicle or 3 .mu.M D-MAPP in the presence of the indicated concentrations of fumonisin B1. Cell growth was determined at 48 h.

Drawing Description Paragraph Right (9):

FIG. 9. Scheme of ceramide metabolism and known inhibitors. Ceramide can be interconverted to sphingomyelin, cerebroside, or sphingosine through the action of at least 6 different enzymatic activities: 1) sphingomyelin synthase; 2) sphingomyelinase; 3) cerebroside synthase; 4) cerebrosidase; 5) ceramidase; 6) ceramide synthase.

Detailed Description Paragraph Right (23):

In addition to ceramidase, inhibition of cerebroside synthase and sphingomyelin synthase or stimulation of sphingomyelinase or cerebrosidase could result in elevations in endogenous ceramide levels. Therefore, the effects of D- and L-e-MAPP were examined on these enzyme activities in vitro and in cells. Neither D- nor L-e-MAPP caused inhibition of cerebroside synthase activity (Table I). As a control, PMMP, a previously established inhibitor of cerebroside synthase, induced significant inhibition of this enzymatic activity (Table I). Also, D- and L-e-MAPP did not activate or modulate the activity of .beta.-glucosidase. In addition, neither D- nor L-e-MAPP modulated the endogenous levels of sphingomyelin arguing against an effect of either of these molecules on sphingomyelinase or sphingomyelin synthase. In vitro, neither D- nor L-e-MAPP modulated the activity of neutral or acidic sphingomyelinases. Finally, fumonisin B1, an inhibitor of ceramide synthase (45), did not inhibit the effects of D-e-MAPP on growth (FIG. 7).

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L5: Entry 3 of 7

File: USPT

Dec 22, 1998

DOCUMENT-IDENTIFIER: US 5851782 A
TITLE: Inhibitors of ceramidase

Drawing Description Paragraph Right (7):

FIG. 7. Effects of fumonisin B1 on growth suppression by D-e-MAPP. HL-60 cells were treated with either vehicle or 3 .mu.M D-MAPP in the presence of the indicated concentrations of fumonisin B1. Cell growth was determined at 48 h.

Drawing Description Paragraph Right (9):

FIG. 9. Scheme of ceramide metabolism and known inhibitors. Ceramide can be interconverted to sphingomyelin, cerebroside, or sphingosine through the action of at least 6 different enzymatic activities: 1) sphingomyelin synthase; 2) sphingomyelinase; 3) cerebroside synthase; 4) cerebrosidase; 5) ceramidase; 6) ceramide synthase.

Detailed Description Paragraph Right (34):

In addition to ceramidase, inhibition of cerebroside synthase and sphingomyelin synthase or stimulation of sphingomyelinase or cerebrosidase could result in elevations in endogenous ceramide levels. Therefore, the effects of D- and L-e-MAPP were examined on these enzyme activities in vitro and in cells. Neither D- nor L-e-MAPP caused inhibition of cerebroside synthase activity (Table I). As a control, PMMP, a previously established inhibitor of cerebroside synthase, induced significant inhibition of this enzymatic activity (Table I). Also, D- and L-e-MAPP did not activate or modulate the activity of .beta.-glucosidase. In addition, neither D- nor L-e-MAPP modulated the endogenous levels of sphingomyelin arguing against an effect of either of these molecules on sphingomyelinase or sphingomyelin synthase. In vitro, neither D- nor L-e-MAPP modulated the activity of neutral or acidic sphingomyelinases. Finally, fumonisin B1, an inhibitor of ceramide synthase (45), did not inhibit the effects of D-e-MAPP on growth (FIG. 7).

Monograph number: 4311.

Title: Fumonisin B₁.

CAS Registry number: [116355-83-0]

CAS name(s): 1,2,3-propanetricarboxylic acid 1,1'-[1-(12-amino-4,9,11-trihydroxy-2-methyltridecyl)-2-(1-methylpentyl)-1,2-ethanediyl] ester;

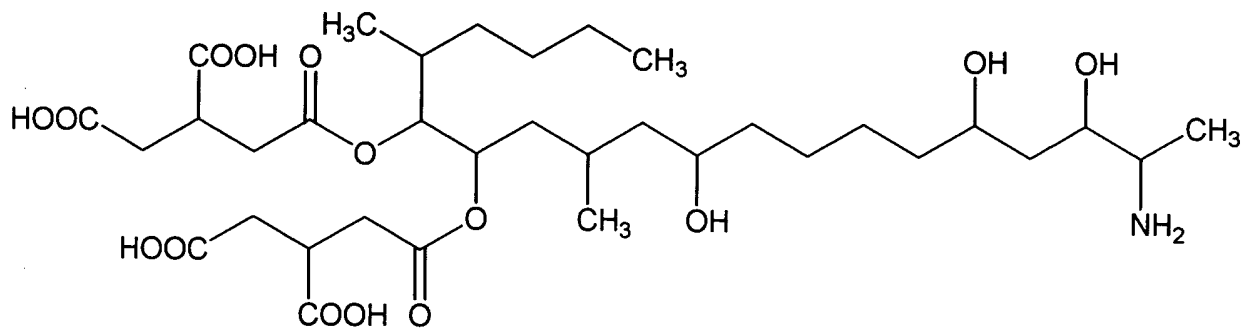
Additional name(s): macrofusine; FB₁.

Molecular formula: C₃₄H₅₉NO₁₅;

Molecular weight: 721.84.

Percent Composition: C 56.57%, H 8.24%, N 1.94%, O 33.25%.

Literature references: Most prevalent of a family of mycotoxins produced by *Fusarium moniliforme*, a common mold associated with corn; also isolated from other *Fusarium* species. Isolation: W. C. A. Gelderblom *et al.*, *Appl. Environ. Microbiol.* **54**, 1806 (1988). Structure elucidation of family: S. C. Bezuidenhout *et al.*, *Chem. Commun.* **1988**, 743. Causative agent of pulmonary edema in pig: L. R. Harrison *et al.*, *J. Vet. Diagn. Invest.* **2**, 217 (1990). Association of B₁, B₂ with human esophageal cancer: J. P. Rheeder *et al.*, *Phytopathology* **82**, 353 (1992). Metabolism: G. S. Shephard *et al.*, *Toxicon* **30**, 768 (1992). Toxicity and carcinogenicity in rat: W. C. A. Gelderblom *et al.*, *Carcinogenesis* **12**, 1247 (1991). Toxicology in pig: W. H. Haschek *et al.*, *Mycopathologia* **117**, 83 (1992). LC determ in corn of B series fumonisins: M. E. Stack, R. M. Eppley, *J. Assoc. Offic. Anal. Chem.* **75**, 834 (1992); P. A. Murphy *et al.*, *J. Agric. Food Chem.* **41**, 263 (1993). Review of animal toxicoses: P. F. Ross *et al.*, *Mycopathologia* **117**, 109-114 (1992). Review: W. P. Norred, *J. Toxicol. Environ. Health* **38**, 309-328 (1993).



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Dec 11, 2001

DOCUMENT-IDENTIFIER: US 6329574 B1
TITLE: High lysine fertile transgenic corn plants

Brief Summary Paragraph Right (116):
Production of mycotoxins, including aflatoxin and fumonisin, by fungi associated with monocotyledonous plants such as maize is a significant factor in rendering the grain not useful. These fungal organisms do not cause disease symptoms and/or interfere with the growth of the plant, but they produce chemicals (mycotoxins) that are toxic to animals. It is contemplated that inhibition of the growth of these fungi would be reduce the synthesis of these toxic substances and therefore reduce grain losses due to mycotoxin contamination. It is also proposed that it may be possible to introduce novel genes into monocotyledonous plants such as maize that would inhibit synthesis of the mycotoxin without interfering with fungal growth. Further, it is contemplated that expression of a novel gene which encodes an enzyme capable of rendering the mycotoxin nontoxic would be useful in order to achieve reduced mycotoxin contamination of grain. The result of any of the above mechanisms would be a reduced presence of mycotoxins on grain.

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NEWS 5 Feb 19 Access via Tymnet and SprintNet Eliminated Effective 3/31/02
NEWS 6 Mar 08 Gene Names now available in BIOSIS
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NEWS 8 Mar 22 TRCTHERMO no longer available
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FILE 'HOME' ENTERED AT 15:20:51 ON 07 MAY 2002

=> file ca, biosis, medline
COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.21	0.21

FULL ESTIMATED COST

FILE 'CA' ENTERED AT 15:21:17 ON 07 MAY 2002
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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FILE 'BIOSIS' ENTERED AT 15:21:17 ON 07 MAY 2002
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FILE 'MEDLINE' ENTERED AT 15:21:17 ON 07 MAY 2002

=> s fumonisin?

L1 3475 FUMONISIN?

=> s sphingolipid (p) l1

L2 428 SPHINGOLIPID (P) L1

=> help

The arrow (=>) is the system prompt, where you enter a command. For an explanation of system commands, files, formats, etc., enter "HELP" and the name of the item you want explained at an arrow prompt (=>). Enter "HELP COMMANDS" for a list of commands that can be used in this file. Enter "HELP MESSAGES" for a list of online explanations that are available. The "?" can be used as a synonym for "HELP".

Help is also available at any prompt, and after any error message. Enter "HELP" or "?" at a prompt to see an explanation of the options. After an error message, enter "HELP" or "?" at the next prompt and you will receive a more detailed explanation of the error and how to correct it.

Automatic help is also available. When AUHELP is 'ON', you will automatically receive help following an error message. For more information on AUHELP, enter "HELP SET AUHELP" at an arrow prompt (=>).

Users who need additional assistance can contact the Help Desk at their nearest STN Service Center. Enter "HELP STN" for information on STN Service Centers. You may also choose to contact the database representative for the file you are searching, for more detailed help on database content and search strategy. For information on how to contact database representatives for the current file, enter "HELP DESK" at an arrow prompt (=>).

=> help commands

Enter one of these commands at the arrow prompt (=>).

ACTIVATE ----- Assign L#s to saved query or answer set.
ANALYZE ----- Build expand terms from answer fields.
ARCHIVE ----- Purchase rights for archiving.
DELETE ----- Delete saved or current session items.
DISPLAY ----- Display saved or current session items.
DUPLICATE ---- Determine duplicate answers
EDIT ----- Modify the text of an E-number entry.
EXPAND ----- Look at the index around a term.

FILE ----- Specify the search and display file.
 FOCUS ----- Rank answers in order of relevancy.
 FSEARCH ----- Find records from given patent family(s)
 FSORT ----- Sort patent records by patent family
 HELP ----- For help on how to use the system.
 INDEX ----- Specify the Index environment.
 LOGOFF ----- End the online session.
 NEWS ----- Display current news about the system.
 PRINT ----- Print answers offline.
 REDISTRIBUTE - Purchase rights for redistribution.
 SAVE ----- Save an L-numbered query or answer set.
 SDI ----- Request searches be run on file updates.
 SEARCH ----- Perform a search.
 SELECT ----- Build expand terms from answer fields.
 SET ----- Set terminal and interaction options.
 SORT ----- Sort Answers of an L-number list
 TABULATE ----- Analyze SmartSELECT L-number data.
 TRANSFER ----- Extract terms from answers and search.
 ? ----- The same as HELP.
 Enter one of these commands at the arrow prompt (=>).

For more detailed information about a command, enter HELP followed by the command name at an arrow prompt.

Example: => HELP SEARCH

For information on entering multiple commands at a single arrow prompt, enter HELP COMMAND STACKING.

=> d his

(FILE 'HOME' ENTERED AT 15:20:51 ON 07 MAY 2002)

FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 15:21:17 ON 07 MAY 2002
 L1 3475 S FUMONISIN?
 L2 428 S SPHINGOLIPID (P) L1

=> s l1 <1991

NUMERIC EXPRESSION NOT VALID 'L1 <1991'

NUMERIC EXPRESSION NOT VALID 'L2 <1991'

NUMERIC EXPRESSION NOT VALID 'L3 <1991'

Numeric search expressions contain an operator (=,>,<,<=>), a field qualifier, and the number or a range to be searched. Examples of valid expressions are 'LD>6', '260-280/MW', and '10 < LD < 30'. For a list of field codes in the current file, enter "HELP SFIELDS" at an arrow prompt (=>). For more information on searching in numeric fields, enter "HELP NUMERIC".

=> help numeric

Most files have fields with numeric data, e.g., Entry Date (/ED), Publication Year (/PY). You may search for a single numeric value, a range of values, or values above or below a specified value. To search for a single value, e.g., a publication year of 1996, enter either S 1996/PY or S PY=1996. To search for a range of values, e.g., publication years from 1990 through 1996, enter S 1990-1996/PY or S 1990<=PY<=1996. Ranges are always inclusive, i.e., the endpoints are included in the search. In the order of precedence, numeric operators are executed before either proximity or Boolean operators.

To learn what fields are numeric in the current file, enter HELP
SNUMERIC at an arrow prompt (=>) in the file.

```
=> s l1 1991-1980/py
MISSING OPERATOR L1 1991-1980/P
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.
```

```
=> s l1 and 1991-1960/py
INCONSISTENT NUMERIC RANGE EXPRESSION '1991-1960'
INCONSISTENT NUMERIC RANGE EXPRESSION '1991-1960'
INCONSISTENT NUMERIC RANGE EXPRESSION '1991-1960'
The lower limit in a numeric range must be given before the upper
limit. For example, '5-1/C' is not valid. The correct form is
'1-5/C'.
```

```
=> s l1 and 1960-1991/py
  2 FILES SEARCHED...
L3          99 L1 AND 1960-1991/PY
```

```
=> dup rem l3
PROCESSING COMPLETED FOR L3
L4          55 DUP REM L3 (44 DUPLICATES REMOVED)
```

```
=> fumonisin b1 and l4
FUMONISIN IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).
```

```
=> s fumonisin b1 and l4
L5          37 FUMONISIN B1 AND L4
```

```
=> s (fumonisin b1) and l4
L6          37 (FUMONISIN B1) AND L4
```

```
=> s admin? or topical? or oral? or patient? or consum? or inject? or rectal?
or system? or human? or mammal?
  95% OF LIMIT FOR TOTAL ANSWERS REACHED
  2 FILES SEARCHED...
```

```
SYSTEM LIMITS EXCEEDED - SEARCH ENDED
L7 12467349 ADMIN? OR TOPICAL? OR ORAL? OR PATIENT? OR CONSUM? OR INJECT?
      OR RECTAL? OR SYSTEM? OR HUMAN? OR MAMMAL?
```

The search profile you entered was too complex or gave too many
answers. Simplify or subdivide the query and try again. If you have
exceeded the answer limit, enter DELETE HISTORY at an arrow prompt
(=>) to remove all previous answers sets and begin at L1. Use the
SAVE command to store any important profiles or answer sets before
using DELETE HISTORY.

```
=> s l7 (p) l4
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L28 (P) L31'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L29 (P) L33'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L30 (P) L35'
L8          18 L7 (P) L4
```

```
=> dup rem l8
```

PROCESSING COMPLETED FOR L8

L9 18 DUP REM L8 (0 DUPLICATES REMOVED)

=> d 1-18 ab,bib

L9 ANSWER 1 OF 18 CA COPYRIGHT 2002 ACS

AB Incubation of rat hepatocytes with **fumonisin**s inhibited incorporation of [14C]serine into the sphingosine moiety of cellular sphingolipids with an IC50 of 0.1 .mu.M for **fumonisin** B1 (I). In contrast, I increased the amt. of the biosynthetic intermediate sphinganine, which suggests that **fumonisin**s inhibit the conversion of [14C]sphinganine to N-acyl-[14C]sphinganes, a step that is thought to precede introduction of the 4,5-trans double bond of sphingosine (1986). In agreement with this mechanism, I inhibited the activity of sphingosine N-acyltransferase (ceramide synthase) in rat liver microsomes with 50% inhibition at approx. 0.1 .mu.M and reduced the conversion of [3H]sphingosine to [3H]ceramide by intact hepatocytes. As far as the authors are aware, this is the 1st discovery of a naturally occurring inhibitor of this step of sphingolipid metab. These findings suggest that disruption of the de novo pathway of sphingolipid biosynthesis may be a crit. event in the diseases that have been assocd. with **consumption** of **fumonisin**s.

AN 115:129684 CA

TI Inhibition of sphingolipid biosynthesis by **fumonisin**s.

Implications for diseases associated with *Fusarium moniliforme*

AU Wang, Elaine; Norred, William P.; Bacon, Charles W.; Riley, Ronald T.; Merrill, Alfred H., Jr.

CS Sch. Med., Emory Univ., Atlanta, GA, 30322, USA

SO J. Biol. Chem. (1991), 266(22), 14486-90

CODEN: JBCHA3; ISSN: 0021-9258

DT Journal

LA English

L9 ANSWER 2 OF 18 CA COPYRIGHT 2002 ACS

AB Corn-based **human** foods from retail outlet in 5 countries were analyzed for **fumonisin** B1 (FB1) and **fumonisin** B2 (FB2). The highest mean concns. occurred in 2 Egyptian samples (2380 ng FB1/g and 595 ng FB2/g). Only 1 of 4 Peruvian samples contained 660 ng FB1/g and 68 ng FB2/g, and only 1 of 2 Canadian samples contained a detectable level of FB1. The 16 corn meal and 10 corn grits products from the USA contained mean concns. of 1048 ng FB1/g and 298 ng FB2/g and 601 ng/g FB1 and 375 ng/g FB2, resp., and the mean concns. in 52 corn meal and 18 grits samples from South Africa were 138 ng FB1/g and 83 ng FB2/g and 125 ng FB1/g and 85 ng FB2/g, resp. Only 1 of 10 cornflakes/lime-treated samples contained a low level of FB1. Of several samples obtained from a high esophageal cancer risk area in the USA 7 of 7 contained FB1

(105-1915 ng/g) and 6 of 7 had FB2 (70-450 ng/g).

AN 115:254522 CA

TI **Fumonisin** contamination of commercial corn-based **human** foodstuffs

AU Sydenham, Eric W.; Shephard, Gordon S.; Thiel, Pieter G.; Marasas, Walter F. O.; Stockenstrom, Sonja

CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Counc., Tygerberg, 7505, S. Afr.

SO J. Agric. Food Chem. (1991), 39(11), 2014-18

CODEN: JAFCAU; ISSN: 0021-8561
 DT Journal
 LA English

L9 ANSWER 3 OF 18 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 AN 1991:331128 BIOSIS
 DN BR41:27678
 TI INHIBITION OF SPHINGOSINE BIOSYNTHESIS BY **FUMONISINS** MYCOTOXINS
 PRODUCED BY FUSARIUM-MONILIFORME.
 AU WANG E; MERRILL A H JR; NORRED W P; BACON C; RILEY R T
 CS DEP. BIOCHEM., EMORY UNIV. SCH. MED., ATLANTA, GA. 30322, USA.
 SO 75TH ANNUAL MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR
 EXPERIMENTAL BIOLOGY, ATLANTA, GEORGIA, USA, APRIL 21-25, 1991. FASEB
 (FED AM SOC EXP BIOL) J. (1991) 5 (6), A1605.
 CODEN: FAJOEC. ISSN: 0892-6638.
 DT Conference
 FS BR; OLD
 LA English

L9 ANSWER 4 OF 18 CA COPYRIGHT 2002 ACS
 AB **Fumonisin** B1 (FB1) and B2 (FB2), two structurally related
 mycotoxins with cancer-promoting activity, were recently isolated from
 corn cultures of *Fusarium moniliforme* MRC 826. These toxins have been
 reported to be produced also by isolates of *F. proliferatum*.
 Contamination of foods and feeds by *F. moniliforme* has been assocd. with
 human esophageal cancer risk, and FB1 has been shown to be the
 causative agent of the neurotoxic disease leukoencephalomalacia in
 horses. Because of the toxicol. importance of the **fumonisin**,
 the potential to produce FB1 and FB2 was detd. in a study of 40 toxic
Fusarium isolates representing 27 taxa in 9 of the 12 sections of
Fusarium, as well as two recently described species not yet classified
 into sections. With the exception of one isolate of *F. nygamai*,
fumonisin prodn. was restricted to isolates of *F. moniliforme* and
F. proliferatum, in the section *Liseola*. The *F. nygamai* isolate produced
 605 .mu.g of FB1 g-1 and 530 .mu.g of FB2 g, and the identity of the
 toxins was confirmed by capillary gas chromatog.-mass spectrometry. This
 is the first report of the prodn. of the **fumonisin** of *F.*
nygamai.
 AN 114:203317 CA
 TI Survey of **fumonisin** production by *Fusarium* species
 AU Thiel, P. G.; Marasas, W. F. O.; Sydenham, E. W.; Shephard, G. S.;
 Gelderblom, W. C. A.; Nieuwenhuis, J. J.
 CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Counc., Tygerberg, 7505, S.
 Afr.
 SO Appl. Environ. Microbiol. (1991), 57(4), 1089-93
 CODEN: AEMIDF; ISSN: 0099-2240
 DT Journal
 LA English

L9 ANSWER 5 OF 18 CA COPYRIGHT 2002 ACS
 AB **Fumonisin** B1 and B2 are mycotoxins, recently reported to
 exhibit cancer-promoting activity. These toxins are produced by the
 fungus *Fusarium moniliforme*. Two thin-layer chromatog. (TLC)
systems are proposed as useful and rapid tests for isolation and
 identification, which do not require high-performance liq. chromatog.
 (HPLC) derivatization. **Fumonisin** B1 and B2 were dissolved in
 methanol (anal. grade from Merck), and 5 .mu.g of each soln. were spotted
 on silica plates (Merck). The two **systems** are: (1)
 chloroform/methanol/acetic acid (60:35:10) run on normal-phase silica

(Merck, Art. 5554) and (2) methanol/water (80:20) run on octadecyl silica (Merck, Art. 15423). The reversed-phase silica plates were not silanized and were activated by a 10-min heating period at 110.degree.. These two **systems** give good resoln. and easily sep. the two **fumonisin** B1 and B2. Visualization was accomplished using acidic anisaldehyde reagent. In addn., a static culture of *F. moniliforme* on maize, as previously reported, was extd. and concd. in Et acetate and analyzed with the two pure com. samples. The retention factors (Rf) for the **fumonisin** in each **system** were detd. The static culture was found to contain **fumonisin** B1 (for which a quant. evaluation was even possible) and minute amts. of **fumonisin** B2.

AN 116:35751 CA
TI Fast thin-layer chromatography **systems** for **fumonisin**
isolation and identification
AU Ackermann, T.
CS Makor Chem., Jerusalem, 91064, Israel
SO J. Appl. Toxicol. (1991), 11(6), 451
CODEN: JJATDK; ISSN: 0260-437X
DT Journal
LA English

L9 ANSWER 6 OF 18 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1992:58558 BIOSIS
DN BR42:22458
TI FAST THIN-LAYER CHROMATOGRAPHY **SYSTEMS** FOR **FUMONISIN**
ISOLATION AND IDENTIFICATION.
AU ACKERMANN T
CS MAKOR CHEMICALS, P.O. BOX 6570, 91064 JERUSALEM, ISRAEL.
SO J. Appl. Toxicol., (1991) 11 (6), 451-452.
CODEN: JJATDK. ISSN: 0260-437X.
FS BR; OLD
LA English

L9 ANSWER 7 OF 18 CA COPYRIGHT 2002 ACS
AB The presence of mycotoxins in a wide range of foods can lead to many different toxic conditions in both man and domestic animals. The major fungi responsible for producing these toxins are species of *Aspergillus*, *Penicillium*, *Fusarium* and *Alternaria*, although other genera are involved as well, for example *Claviceps*, *Diplodia* and *Arthrinium*. An overview is given of the major mycotoxins responsible for illnesses following ingestion of contaminated foods, with particular emphasis on the effects produced in **humans**. Compds. discussed include the aflatoxins, cyclopiazonic acid, tenuazonic acid, the trichothecenes, zearalenone, wortmannin, **fumonisin** B1 and B2, patulin, ochratoxin A, diplodiatoxin and diplosporin.

AN 117:6167 CA
TI Mycotoxins in food
AU Blunden, G.; Roch, O. G.; Rogers, D. J.; Coker, R. D.; Bradburn, N.;
John, A. E.
CS Sch. Pharm. Biomed. Sci., Portsmouth Polytech., Portsmouth, PO1 2DZ, UK
SO Med. Lab. Sci. (1991), 48(4), 271-82
CODEN: MLASDU; ISSN: 0308-3616
DT Journal; General Review
LA English

L9 ANSWER 8 OF 18 MEDLINE
AB During the fall of 1989 and winter of 1990, numerous reports of equine leukoencephalomalacia (ELEM) occurred from many regions of the United States. Typically, horses were **consuming** feed partially or

entirely composed of corn and/or corn screenings. From October 1989 through May 1990, samples from 55 confirmed or suspected ELEM cases were received at the National Veterinary Services Laboratories, Ames, Iowa, for

fumonisin B1 analysis. Samples from 9 cases in 1984-1985 were also obtained. **Fumonisin** B1, a mycotoxin produced by *Fusarium moniliforme*, causes ELEM, but little is known of naturally occurring toxic

or safe levels in feeds. To determine what levels of **fumonisin** B1 in feeds are associated with ELEM, 45 selected cases were studied. The **fumonisin** B1 concentrations ranged from less than 1 ppm to 126 ppm, with the majority of the samples above 10 ppm. All types of feeds were included: corn, screenings, sweet feeds, and commercially pelleted rations. The length of exposure varied from 7 to greater than 35 days. Horse feed samples not associated with ELEM were also collected and analyzed. None of the nonproblem feed samples contained **fumonisin** B1 levels greater than 8 ppm.

AN 92002393 MEDLINE

DN 92002393 PubMed ID: 1911996

TI **Fumonisin** B1 concentrations in feeds from 45 confirmed equine leukoencephalomalacia cases.

AU Ross P F; Rice L G; Reagor J C; Osweiler G D; Wilson T M; Nelson H A; Owens D L; Plattner R D; Harlin K A; Richard J L; +

CS US Department of Agriculture, National Veterinary Services Laboratories, Ames, IA 50010.

SO JOURNAL OF VETERINARY DIAGNOSTIC INVESTIGATION, (1991 Jul) 3 (3) 238-41.

Journal code: A2D; 9011490. ISSN: 1040-6387.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199111

ED Entered STN: 19920124

Last Updated on STN: 19920124

Entered Medline: 19911121

L9 ANSWER 9 OF 18 CA COPYRIGHT 2002 ACS

AB A series of cultured **mammalian** cell lines were examd. to develop a more rapid and sensitive bioassay **system**, which may be useful for examg. structure-activity relationships and the mechanism(s) of action

of a series of structurally related mycotoxins **fumonisin**s B1 and B2 and AAL toxin. Of 9 rat hepatoma cell lines tested, all except the two

most de-differentiated lines were sensitive to the three toxins, with a toxic response visible by 48 h. Approx. IC50 values for the most sensitive 100 .mu.L cultures. Among 15 cell lines from other sources, only MDCK dog kidney epithelial cells were sensitive (IC50 = 2.5, 2 and 5 .mu.g/mL, resp.). Studies in co-cultures of sensitive and insensitive cell lines and in cultures of a sensitive cell line over a range of cell densities indicated that cytotoxicity of **fumonisin**s B1 and B2 does not involve metabolite activation to a deriv. stable enough to diffuse to adjacent cells.

AN 116:77941 CA

TI Toxicity of the mycotoxins **fumonisin**s B1 and B2 and *Alternaria alternata* f. sp. *lycopersici* toxin (AAL) in cultured **mammalian** cells

AU Shier, W. T.; Abbas, H. K.; Mirocha, C. J.

CS Dep. Med. Chem., Univ. Minnesota, St. Paul, MN, 55108, USA

SO Mycopathologia (1991), 116(2), 97-104
CODEN: MYCPAH; ISSN: 0301-486X
DT Journal
LA English

L9 ANSWER 10 OF 18 CA COPYRIGHT 2002 ACS

AB Moldy and healthy corn samples were collected from 2 opposing human esophageal cancer prevalence areas of the Transkei, southern Africa, during 1985, and screened mycol. The moldy corn samples were analyzed for the presence of several Fusarium mycotoxins, including deoxynivalenol (DON), diacetoxyscirpenol (DAS), moniliformin (MON), nivalenol (NIV), T-2 toxin, zearalenone (ZEA), **fumonisin** B1 (FB1) and B2 (FB2), and tricarballic acid [(TCA), a compd. present in the structures of the **fumonisin**]. The healthy corn samples were screened for the presence of FB1 and FB2. High concns. of DON, MON, NIV, ZEA, FB1, and FB2 were recorded in the moldy corn samples. Statistical correlations between the incidence of Fusarium species and mycotoxin levels, present in the corn samples, agreed with the toxin-producing abilities of the individual Fusarium species. Addnl.

data

clearly indicated that significantly higher levels of both FB1 and FB2 were present in the healthy corn samples from the high esophageal cancer rate area than in corresponding samples from the low-rate area.

AN 113:151009 CA

TI Natural occurrence of some Fusarium mycotoxins in corn from low and high esophageal cancer prevalence areas of the Transkei, Southern Africa
AU Sydenham, Eric W.; Thiel, Pieter G.; Marasas, Walter F. O.; Shephard, Gordon S.; Van Schalkwyk, Dirk J.; Koch, Klaus R.
CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Council, Tygerberg, 7505, S. Afr.

SO J. Agric. Food Chem. (1990), 38(10), 1900-3
CODEN: JAFCAU; ISSN: 0021-8561

DT Journal
LA English

L9 ANSWER 11 OF 18 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1991:42865 BIOSIS

DN BR40:19845

TI TOXICITY OF THE MYCOTOXINS **FUMONISINS** B-1 AND B-2 AND ALTERNARIA-ALTERNATA-F-SP-LYCOPERSICI AAL TOXIN IN CULTURED **MAMMALIAN** CELL LINES.

AU SHIER W T; ABBAS H K; MIROCHA C J

CS DEP. MED. CHEM., UNIV. MINN., ST. PAUL, MINN. 55108, USA.

SO 1990 ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY AND THE CANADIAN PHYTOPATHOLOGICAL SOCIETY, GRAND RAPIDS, MICHIGAN, USA, AUGUST 4-8, 1990. PHYTOPATHOLOGY. (1990) 80 (10), 1052.
CODEN: PHYTAJ. ISSN: 0031-949X.

DT Conference
FS BR; OLD
LA English

L9 ANSWER 12 OF 18 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AB Leukoencephalomalacia (LEM) was induced by the oral administration of **fumonisin** B1 (FB1) to 2 horses: a filly received 59,5 mg/kg of a 50% preparation of FB1, administered in 21 doses of 1,25-4 mg/kg over 33 days; a colt, 44,3 mg/kg of 95% pure FB1 in 20 doses of 1-4 mg/kg in 29 days. Both animals developed nervous signs such as apathy, changes in temperament, inco-ordination, walking into objects, and one showed paralysis of the lips and tongue. Characteristic lesions of LEM were present in the brains.

These trials proved conclusively that FB1 can induce LEM in horses.

AN 1991:325320 BIOSIS
 DN BA92:35835
 TI LEUKOENCEPHALOMALACIA IN TWO HORSES INDUCED BY ORAL DOSING OF
FUMONISIN B-1.
 AU KELLERMAN T S; MARASAS W F O; THIEL P G; GELDERBLOM W C A; CAWOOD M;
 COETZER J A W
 CS VETERINARY RES. INST., ONDERSTEEPOORT 0110, SOUTH AFRICA.
 SO ONDERSTEEPOORT J VET RES, (1990) 57 (4), 269-276.
 CODEN: OJVRAZ. ISSN: 0030-2465.
 FS BA; OLD
 LA English

L9 ANSWER 13 OF 18 MEDLINE
 AB Pulmonary edema and hydrothorax were observed in mature swine that died
 approximately 5 days after **consuming** corn screenings. These
 postmortem observations were reproduced in younger swine (16-24 kg) that
 died within 1 week when fed the corn screenings under experimental
 conditions. Additionally, pulmonary edema and hydrothorax occurred in a
 pig (7.1 kg) that died after receiving 4 daily intravenous
injections of **fumonisin B1**. A fungus was isolated from
 the corn screenings that is identical to *Fusarium moniliforme* MRC-826 in
 colony morphology and under microscopic examination.

AN 91242753 MEDLINE
 DN 91242753 PubMed ID: 2094448
 TI Pulmonary edema and hydrothorax in swine produced by **fumonisin**
B1, a toxic metabolite of *Fusarium moniliforme*.
 AU Harrison L R; Colvin B M; Greene J T; Newman L E; Cole J R Jr
 CS Veterinary Diagnostic and Investigational Laboratory, University of
 Georgia, Tifton 31794.
 SO JOURNAL OF VETERINARY DIAGNOSTIC INVESTIGATION, (1990 Jul) 2 (3)
 217-21.
 Journal code: A2D; 9011490. ISSN: 1040-6387.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199107
 ED Entered STN: 19910719
 Last Updated on STN: 19910719
 Entered Medline: 19910702

L9 ANSWER 14 OF 18 CA COPYRIGHT 2002 ACS
 AB *F. moniliforme* has been assocd. with several diseases, including equine
 leukoencephalomalacia, **human** esophageal cancer, and
 hepatotoxicity/hepatocarcinogenicity in lab. animals. The potential
 health risks to animals and **humans** posed by *F.*
moniliforme-contaminated grains cannot be assessed until the toxins are
 identified and toxicol. evaluated. As part of a **systematic**
 approach to identifying the hepatotoxins produced by *F. moniliforme*,
 diets
 contg. aq. and chloroform/methanol (1:1) exts. of *F. moniliforme* strain
 MRC 826 culture material (CM) and/or the extd. CM residues were fed to
 male Sprague-Dawley rats for four weeks. Serum alanine aminotransferase,
 aspartate aminotransferase, and alk. phosphatase activities were
 increased
 after two and four weeks, and microscopic liver lesions were found in
 those animals fed aq. CM ext. and the CM residue after
 chloroform/methanol
 extn. **Fumonisin** B1 and B2 were extd. from the CM by water, but

not chloroform/methanol, and were present in the toxic diets at concns.
of 93-139 and 82-147 ppm, resp. Nontoxic diets contained .ltoreq.22 ppm
fumonisin B1 and .ltoreq.65 ppm **fumonisin** B2.

AN 115:24074 CA
TI Comparative studies of hepatotoxicity and **fumonisin** B1 and B2
content of water and chloroform/methanol extracts of *Fusarium moniliforme*
strain MRC 826 culture material

AU Voss, Kenneth A.; Plattner, Ronald D.; Bacon, Charles W.; Norred, William
P.
CS Toxicol. Mycotoxin Res. Unit, Agric. Res. Serv., Athens, GA, 30613, USA
SO Mycopathologia (1990), 112(2), 81-92
CODEN: MYCPAH; ISSN: 0301-486X
DT Journal
LA English

L9 ANSWER 15 OF 18 CA COPYRIGHT 2002 ACS
AB A bioassay was developed to det. the potential toxicity of corn naturally
contaminated with *Fusarium moniliforme*. Two groups of five male
Sprague-Dawley rats were each fed one of two *F. moniliforme*-contaminated
corn samples, designated CS-1 and CS-2, that were assocd. with sep. field
cases of equine leukoencephalomalacia. A control group, also consisting
of 5 male rats, was fed uncontaminated seed corn. All animals survived
to the end of the study, and there were no apparent differences in
appearance or behavior among groups. Wt. loss and irregular food **consumption**
occurred in all groups and probably resulted from nutritional
deficiencies inherent in the corn diets. Hepatocellular degeneration, necrosis and
hyperplasia as well as biliary hyperplasia were found in the test groups
only and were attributed to *F. moniliforme*. Serum transaminase and alk.
phosphatase activities in animals fed CS-1 and CS-2 for 4 wk were
significantly increased compared with the controls, while serum bilirubin
concn. was increased only in the CS-1 group. Tubular nephrosis was also
present in the renal cortex of all animals fed CS-1 and CS-2. These
effects may have been related to **fumonisin**s B1 and B2, recently
discovered metabolites of *F. moniliforme*, that were found in both CS-1
and CS-2. Short-term studies of this type may be useful in screening
naturally-contaminated grains and other materials for hepatotoxic
metabolites produced by *F. moniliforme*.

AN 111:22330 CA
TI Hepatotoxicity and renal toxicity in rats of corn samples associated with
field cases of equine leukoencephalomalacia

AU Voss, K. A.; Norred, W. P.; Plattner, R. D.; Bacon, C. W.
CS Richard B. Russell Agric. Res. Cent., Agric. Res. Serv., Athens, GA,
30613, USA
SO Food Chem. Toxicol. (1989), 27(2), 89-96
CODEN: FCTOD7; ISSN: 0278-6915
DT Journal
LA English

L9 ANSWER 16 OF 18 CA COPYRIGHT 2002 ACS
AB Two new mycotoxins, macrofusin (similar to **fumonisine** B1; see
C.A. Bezuidenhout et al, 1988) and micromonilin, were isolated from
macroconidies or microconidies of *F. moniliforme* cultivated on corn.
Macrofusin, given by esophageal **injection** is toxic in rats and
leads to icterus. Micromonilin acts on the sodium channel. The possible
action of the toxins in equine leukoencephalomalacia and assocd. symptoms

is discussed.

- AN 112:173806 CA
TI Macrofusin and micromonilin: two new mycotoxins isolated from corn
infested by *Fusarium moniliforme* Sheld
AU Laurent, D.; Platzer, Nicole; Kohler, F.; Sauviat, M. P.; Pellegrin, F.
CS Lab. Phytopathol., ORSTOM, Nouvelle-Calédonie, Fr.
SO Microbiol., Aliments, Nutr. (1989), 7(1), 9-16
CODEN: MANUEP; ISSN: 0759-0644
DT Journal
LA French
- L9 ANSWER 17 OF 18 CA COPYRIGHT 2002 ACS
AB Culture material of *F. moniliforme* isolate exhibits cancer-promoting
activity in a short-term cancer initiation-promotion bioassay with
diethylnitrosamine-initiated rats and induces .gamma.-
glutamyltranspeptidase-pos. (GGT+) foci as an endpoint after 4 wk of
promotion. This bioassay was used as a monitoring **system** to
isolate cancer-promoting compds. from cultures of *F. moniliforme* MRC 826.
Culture material was successively extd. with Et acetate and MeOH-H₂O
(3:1). Most of the cancer-promoting activity was recovered in the
MeOH-H₂O ext. and remained in the aq. phase following partitioning of
this
ext. between MeOH-H₂O (1:3) and CHCl₃. The MeOH-H₂O fraction was
chromatographed on an Amberlite XAD-2 column, and the active fraction was
eluted with MeOH. This fraction was chromatographed on a silica gel
column with CHCl₃-MeOH-MeCO₂H (6:3:1) as eluent and further purified on a
C18 reverse-phase column. Two pure compds. were isolated, and these have
been chem. characterized and given the trivial names **fumonisin**
B1 and B2. At least 2 g of the major compd. **fumonisin** B1 was
purified from 1 kg of culture material. **Fumonisin** B1 in the
diet (0.1%) significantly induced the formation of GGT+ foci in the
livers
of initiated as well as noninitiated rats. The cancer-promoting effect
of **fumonisin** B1 in rats was assocd. with a toxic effect, as evidenced
by a significant redn. in wt. gain during the 4-wk promoting treatment.
The principal pathol. change in rats treated with **fumonisin** B1
was an insidious and progressive toxic hepatitis similar to that induced
by toxic culture material of *F. moniliforme* MRC 826.
- AN 109:124164 CA
TI **Fumonisin**s-novel mycotoxins with cancer-promoting activity
produced by *Fusarium moniliforme*
AU Gelderblom, W. C. A.; Jaskiewicz, K.; Marasas, W. F. O.; Thiel, P. G.;
Horak, R. M.; Vleggaar, R.; Kriek, N. P. J.
CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Counc., Tygerberg, 7505, S.
Afr.
SO Appl. Environ. Microbiol. (1988), 54(7), 1806-11
CODEN: AEMIDF; ISSN: 0099-2240
DT Journal
LA English
- L9 ANSWER 18 OF 18 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AB Each of two horses was dosed by stomach tube with culture material on
maize of *Fusarium moniliforme* MRC 826. One horse developed severe
hepatosis and mild oedema of the brain after 6 doses of 2.5 g of culture
material/kg body mass/day in 7 days. The second horse, in a similar
experiment but at a dosage rate of 1.25 g/kg/day, developed mild
hepatosis
and moderate oedema of the brain. In both animals the brain oedema was
particularly noticeable in the medulla oblongata. The mycotoxin

fumonisin B1 was extracted and purified from the culture material of *F. moniliforme* MRC, 826 which contained approximately 1 g/kg of this compound. A horse was **injected** intravenously 7 times from Day 0-Day 9 with 0.125 mg of **fumonisin** B1/kg body mass/day. Clinical signs of neurotoxicosis, which appeared on Day 8, included nervousness followed by apathy, a wide-based stance, trembling, ataxia, reluctance to move, paresis of the lower lip and tongue, and an inability to eat or drink. Euthanasia was performed on the horse on Day 10 while the animal was in a tetanic convulsion. The principal lesions were severe oedema of the brain and early, bilaterally symmetrical, focal necrosis in the medulla oblongata. This report provides experimental evidence that **fumonisin** B1, produced by *F. moniliforme*, causes equine leukoencephalomalacia.

AN 1989:274863 BIOSIS
 DN BA88:10945
 TI LEUKOENCEPHALOMALACIA IN A HORSE INDUCED BY **FUMONISIN** B-1
 ISOLATED FROM FUSARIUM-MONILIFORME.
 AU MARASAS W F O; KELLERMAN T S; GELDERBLOM W C A; COETZER J A W; THIEL P G;
 VAN DER LUGT J J
 CS S. AFR. MED. RES. COUNCIL, P.O. BOX 70, TYGERBERG 7505, S. AFR.
 SO ONDERSTEEPOORT J VET RES, (1988) 55 (4), 197-204.
 CODEN: OJVRAZ. ISSN: 0030-2465.
 FS BA; OLD
 LA English

=> d his

(FILE 'HOME' ENTERED AT 15:20:51 ON 07 MAY 2002)

FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 15:21:17 ON 07 MAY 2002

L1 3475 S FUMONISIN?
 L2 428 S SPHINGOLIPID (P) L1
 L3 99 S L1 AND 1960-1991/PY
 L4 55 DUP REM L3 (44 DUPLICATES REMOVED)
 L5 37 S FUMONISIN B1 AND L4
 L6 37 S (FUMONISIN B1) AND L4
 L7 12467349 S ADMIN? OR TOPICAL? OR ORAL? OR PATIENT? OR CONSUM? OR
 INJECT?
 L8 18 S L7 (P) L4
 L9 18 DUP REM L8 (0 DUPLICATES REMOVED)

=> dup rem l6

PROCESSING COMPLETED FOR L6

L10 37 DUP REM L6 (0 DUPLICATES REMOVED)

=> d 1-37 ab,bib

L10 ANSWER 1 OF 37 MEDLINE
 AN 91258193 MEDLINE
 DN 91258193 PubMed ID: 2045319
 TI **Fumonisin** mycotoxins and equine leukoencephalomalacia.
 CM Comment on: J Am Vet Med Assoc. 1991 Jan 1;198(1):126-8
 AU Wilson T M; Ross P F; Nelson P E
 SO JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION, (1991 Apr
 1) 198 (7) 1104-5.
 Journal code: HAV; 7503067. ISSN: 0003-1488.
 CY United States
 DT Commentary
 Letter

LA English
FS Priority Journals
EM 199107
ED Entered STN: 19910802
Last Updated on STN: 19910802
Entered Medline: 19910712

L10 ANSWER 2 OF 37 CA COPYRIGHT 2002 ACS

AB Incubation of rat hepatocytes with **fumonisin**s inhibited incorporation of [14C]serine into the sphingosine moiety of cellular sphingolipids with an IC50 of 0.1 .mu.M for **fumonisin B1** (I). In contrast, I increased the amt. of the biosynthetic intermediate sphinganine, which suggests that **fumonisin**s inhibit the conversion of [14C]sphinganine to N-acyl-[14C]sphinganine, a step that is thought to precede introduction of the 4,5-trans double bond of sphingosine (1986). In agreement with this mechanism, I inhibited the activity of sphingosine N-acyltransferase (ceramide synthase) in rat liver microsomes with 50% inhibition at approx. 0.1 .mu.M and reduced the conversion of [3H]sphingosine to [3H]ceramide by intact hepatocytes. As far as the authors are aware, this is the 1st discovery of a naturally occurring inhibitor of this step of sphingolipid metab. These findings suggest that disruption of the de novo pathway of sphingolipid biosynthesis may be a crit. event in the diseases that have been assocd. with consumption of **fumonisin**s.

AN 115:129684 CA

TI Inhibition of sphingolipid biosynthesis by **fumonisin**s.

Implications for diseases associated with Fusarium moniliforme

AU Wang, Elaine; Norred, William P.; Bacon, Charles W.; Riley, Ronald T.; Merrill, Alfred H., Jr.

CS Sch. Med., Emory Univ., Atlanta, GA, 30322, USA

SO J. Biol. Chem. (1991), 266(22), 14486-90

CODEN: JBCHA3; ISSN: 0021-9258

DT Journal

LA English

L10 ANSWER 3 OF 37 CA COPYRIGHT 2002 ACS

AB Strains of F. moniliforme from different geog. areas and from corn and other substrates were tested for the ability to produce **fumonisin**s in culture. The test results indicate that the potential exists for prodn. of **fumonisin**s by such strains in agricultural commodities and other substrates in widespread geog. areas.

AN 115:131671 CA

TI Production of **fumonisin**s by Fusarium moniliforme strains from various substrates and geographic areas

AU Nelson, Paul E.; Plattner, Ronald D.; Shackelford, Darcy D.; Desjardins, Anne E.

CS Fusarium Res. Cent., Pennsylvania State Univ., University Park, PA, 16802, USA

SO Appl. Environ. Microbiol. (1991), 57(8), 2410-12
CODEN: AEMIDF; ISSN: 0099-2240

DT Journal

LA English

L10 ANSWER 4 OF 37 CA COPYRIGHT 2002 ACS

AB Corn-based human foods from retail outlet in 5 countries were analyzed for **fumonisin B1** (FB1) and **fumonisin B2** (FB2).

and The highest mean concns. occurred in 2 Egyptian samples (2380 ng FB1/g
68 595 ng FB2/g). Only 1 of 4 Peruvian samples contained 660 ng FB1/g and
of ng FB2/g, and only 1 of 2 Canadian samples contained a detectable level
of FB1. The 16 corn meal and 10 corn grits products from the USA contained
mean concns. of 1048 ng FB1/g and 298 ng FB2/g and 601 ng/g FB1 and 375
ng/g FB2, resp., and the mean concns. in 52 corn meal and 18 grits
samples from South Africa were 138 ng FB1/g and 83 ng FB2/g and 125 ng FB1/g and
85 ng FB2/g, resp. Only 1 of 10 cornflakes/lime-treated samples
contained

a low level of FB1. Of several samples obtained from a high esophageal
cancer risk area in the USA 7 of 7 contained FB1 (105-1915 ng/g) and 6 of
7 had FB2 (70-450 ng/g).

AN 115:254522 CA

TI **Fumonisin** contamination of commercial corn-based human
foodstuffs

AU Sydenham, Eric W.; Shephard, Gordon S.; Thiel, Pieter G.; Marasas, Walter
F. O.; Stockenstrom, Sonja

CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Counc., Tygerberg, 7505, S.
Afr.

SO J. Agric. Food Chem. (1991), 39(11), 2014-18
CODEN: JAFCAU; ISSN: 0021-8561

DT Journal

LA English

L10 ANSWER 5 OF 37 CA COPYRIGHT 2002 ACS

AB A method for the preparative-scale isolation of the **fumonisin B**
(FB) mycotoxins, from corn cultures of *Fusarium moniliforme*, was
described

and quant. evaluated. Eighty percent of FB1 and 60% of FB2 were
recovered

after extn. with CH3OH/H2O (3:1). The **fumonisins**, including the
newly discovered FB3 and FB4, were purified using Amberlite XAD-2, silica
gel, and reversed-phase C18 chromatog. The Amberlite XAD-2 purifn. step
proved to be the most effective cleanup procedure, whereas subsequent
chromatog. on silica gel and RP C18 effectively sep. the individual
fumonisins to a purity of over 90%. The relatively low final
yield (40%) of FB1 and FB2 may be ascribed to (1) the strong affinity of
FB1 for silica gel, (2) the low initial recovery (60%) of FB2, and (3)
the

formation of monomethyl and di-Me esters of FB1 and FB2, as well as their
interference in the purifn. of the individual **fumonisins**. The
N-acetyl derivs. of FB1 and FB2 were also purified and shown to be
metabolites of *F. moniliforme*.

AN 115:249688 CA

TI Isolation of the **fumonisin** mycotoxins: A quantitative approach

AU Cawood, Maria E.; Gelderblom, Wentzel C. A.; Vleggaar, Robert; Behrend,
Yosef; Thiel, Pieter G.; Marasas, Walter F. O.

CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Counc., Tygerberg, 7505, S.
Afr.

SO J. Agric. Food Chem. (1991), 39(11), 1958-62
CODEN: JAFCAU; ISSN: 0021-8561

DT Journal

LA English

L10 ANSWER 6 OF 37 CA COPYRIGHT 2002 ACS

AB A semipurified corn-based diet contg. 50 mg/kg of pure (not <90%)

fumonisin B1 (FB1), isolated from culture material of *F. moniliforme* strain MRC 826, was fed to a group of 25 rats over a period of 26 mo. Five rats from each group were killed at 6, 12, 20, and 26 mo. The liver was the main target organ in the FB1-treated rats and the hepatic pathol. changes were identical to those previously reported in rats fed culture material of *F. moniliforme* MRC 826. All FB1-treated rats that died or were killed from 18 mo onwards suffered from a micro- and macronodular cirrhosis and had large expansile nodules of cholangiofibrosis at the hilus of the liver. Ten of 15 FB1-treated rats (66%) that were killed and(or) died between 18 and 26 mo developed primary hepatocellular carcinoma. Metastases to the heart, lungs, or kidneys were present in four of the rats with hepatocellular carcinoma. No neoplastic changes were obsd. in any of the control rats. Chronic interstitial nephritis was present in the kidneys of FB1-treated rats killed after 26 mo. No lesions were obsd. in the esophagus, heart, or forestomach of FB1-treated rats and this is contrary to previous findings when culture material of the fungus was fed to rats. It is concluded that FB1 is responsible for the hepatocarcinogenic and the hepatotoxic but not all the other toxic effects of culture material of *F. moniliforme* MRC 826 in rats.

AN 115:87281 CA
 TI Toxicity and carcinogenicity of the *Fusarium moniliforme* metabolite, **fumonisin B1** in rats
 AU Gelderblom, W. C. A.; Kriek, N. P. J.; Marasas, W. F. O.; Thiel, P. G.
 CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Council, Tygerberg, 7505, S. Afr.
 SO Carcinogenesis (London) (1991), 12(7), 1247-51
 CODEN: CRNGDP; ISSN: 0143-3334
 DT Journal
 LA English

L10 ANSWER 7 OF 37 CA COPYRIGHT 2002 ACS
 AB **Fumonisin**s B1 (FB1) and B2 (FB2), two structurally related mycotoxins with cancer-promoting activity, were recently isolated from corn cultures of *Fusarium moniliforme* MRC 826. These toxins have been reported to be produced also by isolates of *F. proliferatum*. Contamination of foods and feeds by *F. moniliforme* has been assocd. with human esophageal cancer risk, and FB1 has been shown to be the causative agent of the neurotoxic disease leukoencephalomalacia in horses. Because of the toxicol. importance of the **fumonisin**s, the potential to produce FB1 and FB2 was detd. in a study of 40 toxic *Fusarium* isolates representing 27 taxa in 9 of the 12 sections of *Fusarium*, as well as two recently described species not yet classified into sections. With the exception of one isolate of *F. nygamai*, **fumonisin** prodn. was restricted to isolates of *F. moniliforme* and *F. proliferatum*, in the section *Liseola*. The *F. nygamai* isolate produced 605 .mu.g of FB1 g-1 and 530 .mu.g of FB2 g, and the identity of the toxins was confirmed by capillary gas chromatog.-mass spectrometry. This is the first report of the prodn. of the **fumonisin**s of *F. nygamai*.

AN 114:203317 CA
 TI Survey of **fumonisin** production by *Fusarium* species
 AU Thiel, P. G.; Marasas, W. F. O.; Sydenham, E. W.; Shephard, G. S.; Gelderblom, W. C. A.; Nieuwenhuis, J. J.

CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Counc., Tygerberg, 7505, S. Afr.
SO Appl. Environ. Microbiol. (1991), 57(4), 1089-93
CODEN: AEMIDF; ISSN: 0099-2240
DT Journal
LA English

L10 ANSWER 8 OF 37 CA COPYRIGHT 2002 ACS

AB Corn is frequently contaminated by the fungus *Fusarium moniliforme*, which produces toxic **fumonisin**s. Ammonia can effectively detoxify aflatoxins in corn and cottonseed. Since corn can be contaminated by both

fumonisins and aflatoxins, the effects of ammoniation of corn either cultured with or naturally contaminated by *F. moniliforme* were investigated. **Fumonisin B1** levels in the culture material and in naturally contaminated corn were reduced by 30 and .apprx.45%, resp., by the ammonia treatment. Despite the apparent redn. in **fumonisin** content, the toxicity of the culture material in rats was not altered by ammoniation. Reduced wt. gains, elevated serum enzyme levels and histopathol. lesions, typical of *F. moniliforme* toxicity, occurred in rats fed either the ammoniated or non-ammoniated culture material. Atm. ammoniation of corn does not appear to be an effective method for the detoxification of *F. moniliforme*-contaminated corn.

AN 116:82381 CA

TI Effectiveness of ammonia treatment in detoxification of **fumonisin**-contaminated corn

AU Norred, W. P.; Voss, K. A.; Bacon, C. W.; Riley, R. T.

CS Toxicol. Mycotoxin Res. Unit, Richard B. Russell Agric. Res. Cent., Athens, GA, 30613, USA

SO Food Chem. Toxicol. (1991), 29(12), 815-19

CODEN: FCTOD7; ISSN: 0278-6915

DT Journal

LA English

L10 ANSWER 9 OF 37 CA COPYRIGHT 2002 ACS

AB An isolate of *F. moniliforme* (JW #1) was effective in producing disease symptoms in jimson weed (*Datura stramonium*). A major toxin identified was

fumonisin B1, isolated from fermented rice at 400 .mu.g g-1. **Fumonisin B1** applied in water at 2.5 .mu.g 100 .mu.L-1 to excised jimson weed leaves caused the same symptomol. (i.e., soft rot diffusing along leaf veins) within 24 h as a cell-free ext. or the crude culture filtrates. Similar damage occurred to intact plants treated with crude or cell-free filtrates or purified aq. **fumonisin B1** solns.

AN 116:78514 CA

TI Bioherbicidal potential of *Fusarium moniliforme* and its phytotoxin **fumonisin**

AU Abbas, Hamed K.; Boyette, C. Douglas; Hoagland, Robert E.; Vesonder, Ronald F.

CS South. Weed. Sci. Lab., ARS, Stoneville, MS, 38776, USA

SO Weed Sci. (1991), 39(4), 673-7

CODEN: WEESA6; ISSN: 0043-1745

DT Journal

LA English

L10 ANSWER 10 OF 37 CA COPYRIGHT 2002 ACS

AB The utility of thermospray mass spectrometry (TSMS), fast-atom bombardment

mass spectrometry (FABMS), and electrospray mass spectrometry (ESMS) for the anal. of Fumonsin B1 is investigated. In addn., the anal. of two different stds. of **Fumonisin B1** as well as an inoculated corn culture ext. that contained **Fumonisin B1** is reported. The results of these efforts show that ESMS, as well as FABMS and a combination of FAB and tandem mass spectrometry (FABMS/MS), provide useful data for the characterization of **Fumonisin B1**. The detection limit was 50 pg for **Fumonisin B1** when analyzed by full scan FABMS, and 5 pg when analyzed by single-reaction monitoring FABMS/MS.

AN 115:254456 CA
 TI Characterization of the mycotoxin **fumonisin B1**: comparison of thermospray, fast-atom bombardment, and electrospray mass spectrometry
 AU Korfmacher, W. A.; Chiarelli, M. P.; Lay, J. O., Jr.; Bloom, J.; Holcomb, M.; McManus, K. T.
 CS Natl. Cent. Toxicol. Res., U. S. FDA, Jefferson, AR, 72079, USA
 SO Rapid Commun. Mass Spectrom. (1991), 5(10), 463-8
 CODEN: RCMSEF; ISSN: 0951-4198
 DT Journal
 LA English

L10 ANSWER 11 OF 37 CA COPYRIGHT 2002 ACS
 AB **Fumonisin**s B1 and B2 are mycotoxins, recently reported to exhibit cancer-promoting activity. These toxins are produced by the fungus *Fusarium moniliforme*. Two thin-layer chromatog. (TLC) systems are proposed as useful and rapid tests for isolation and identification, which do not require high-performance liq. chromatog. (HPLC) derivatization. **Fumonisin**s B1 and B2 were dissolved in methanol (anal. grade from Merck), and 5 .mu.g of each soln. were spotted on silica plates (Merck). The two systems are: (1) chloroform/methanol/acetic acid (60:35:10) run on normal-phase silica (Merck, Art. 5554) and (2) methanol/water (80:20) run on octadecyl silica (Merck, Art. 15423). The reversed-phase silica plates were not silanized and were activated by a 10-min heating period at 110.degree.. These two systems give good resoln. and easily sep. the two **fumonisins** B1 and B2. Visualization was accomplished using acidic anisaldehyde reagent. In addn., a static culture of *F. moniliforme* on maize, as previously reported, was extd. and concd. in Et acetate and analyzed with the two pure com. samples. The retention factors (Rf) for the **fumonisins** in each system were detd. The static culture was found to contain **fumonisin B1** (for which a quant. evaluation was even possible) and minute amts. of **fumonisin B2**.

AN 116:35751 CA
 TI Fast thin-layer chromatography systems for **fumonisin** isolation and identification
 AU Ackermann, T.
 CS Makor Chem., Jerusalem, 91064, Israel
 SO J. Appl. Toxicol. (1991), 11(6), 451
 CODEN: JJATDK; ISSN: 0260-437X
 DT Journal
 LA English

L10 ANSWER 12 OF 37 MEDLINE
 AN 92103089 MEDLINE
 DN 92103089 PubMed ID: 1760472
 TI Analysis of corn and cultured corn for **fumonisin B1** by HPLC and GC/MS by four laboratories.

AU Plattner R D; Ross P F; Reagor J; Stedelin J; Rice L G
 CS US Department of Agriculture, National Center for Agricultural
 Utilization
 Research, Peoria, IL 61604.
 SO JOURNAL OF VETERINARY DIAGNOSTIC INVESTIGATION, (1991 Oct) 3 (4)
 357-8.
 Journal code: A2D; 9011490. ISSN: 1040-6387.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199202
 ED Entered STN: 19920302
 Last Updated on STN: 19920302
 Entered Medline: 19920212

L10 ANSWER 13 OF 37 MEDLINE
 AB During the fall of 1989 and winter of 1990, numerous reports of equine
 leukoencephalomalacia (ELEM) occurred from many regions of the United
 States. Typically, horses were consuming feed partially or entirely
 composed of corn and/or corn screenings. From October 1989 through May
 1990, samples from 55 confirmed or suspected ELEM cases were received at
 the National Veterinary Services Laboratories, Ames, Iowa, for
fumonisin B1 analysis. Samples from 9 cases in 1984-1985
 were also obtained. **Fumonisin B1**, a mycotoxin produced
 by *Fusarium moniliforme*, causes ELEM, but little is known of naturally
 occurring toxic or safe levels in feeds. To determine what levels of
fumonisin B1 in feeds are associated with ELEM, 45
 selected cases were studied. The **fumonisin B1**
 concentrations ranged from less than 1 ppm to 126 ppm, with the majority
 of the samples above 10 ppm. All types of feeds were included: corn,
 screenings, sweet feeds, and commercially pelleted rations. The length of
 exposure varied from 7 to greater than 35 days. Horse feed samples not
 associated with ELEM were also collected and analyzed. None of the
 nonproblem feed samples contained **fumonisin B1** levels
 greater than 8 ppm.
 AN 92002393 MEDLINE
 DN 92002393 PubMed ID: 1911996
 TI **Fumonisin B1** concentrations in feeds from 45 confirmed
 equine leukoencephalomalacia cases.
 AU Ross P F; Rice L G; Reagor J C; Osweiler G D; Wilson T M; Nelson H A;
 Owens D L; Plattner R D; Harlin K A; Richard J L; +
 CS US Department of Agriculture, National Veterinary Services Laboratories,
 Ames, IA 50010.
 SO JOURNAL OF VETERINARY DIAGNOSTIC INVESTIGATION, (1991 Jul) 3 (3)
 238-41.
 Journal code: A2D; 9011490. ISSN: 1040-6387.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199111
 ED Entered STN: 19920124
 Last Updated on STN: 19920124
 Entered Medline: 19911121

L10 ANSWER 14 OF 37 CA COPYRIGHT 2002 ACS
 AB A review with 26 refs. Bacterial and fungal microbes produce a wide
 array
 of phytotoxic compds. with the potential for direct use as herbicides or

as models for new structural classes and/or new sites of action for herbicides. Bialophos and glufosinate are the only microbial products that have been commercialized without modification. Industry has generally screened large nos. of non-pathogenic microbes for new phytotoxins; however, screening smaller nos. of plant pathogens that infect weeds for phytotoxins may be equally rewarding. Two examples of toxins from plant pathogens, colletotrichin and **fumonisin B1**, are discussed in detail. Microbial toxins also offer potential new sites of action for biorational discovery of herbicides. Different strategies of herbicide discovery and development from

microbial

products are discussed with specific examples.

AN 117:2615 CA

TI Microbial compounds with the potential for herbicidal use

AU Duke, Stephen O.; Abbas, Hamed K.; Boyette, C. Douglas; Gohbara, Masatoshi

CS South. Weed Sci. Lab., USDA, Stoneville, MS, 38776, USA

SO Brighton Crop Prot. Conf.--Weeds (1991), Vol. 1 155-64

CODEN: BCPWE2; ISSN: 0955-1514

DT Journal; General Review

LA English

L10 ANSWER 15 OF 37 CA COPYRIGHT 2002 ACS

AB Ninety-eight samples of feeds assocd. with 44 cases of equine leukoencephalomalacia (ELEM) and 83 samples of feed assocd. with 42 cases of a porcine pulmonary edema syndrome (PPE) were analyzed for **fumonisin B1** (FB1). For comparison, 51 feed samples not assocd. with PPE or ELEM were also analyzed. Feed assocd. with ELEM contained FB1 ranging from <1 .mu.g/g to 126 .mu.g/g with 75% of the

cases

having at least 1 sample above 10 .mu.g/g. Feeds assocd. with PPE ranged from <1 .mu.g/g to 330 .mu.g/g with 71% of the cases having at least 1 sample greater than 10 .mu.g/g. Quantitation was by HPLC/fluorescence using the fluoreescamine deriv. with confirmation by TLC and/or gas chromatog./mass spectroscopy.

AN 115:181719 CA

TI Concentrations of **fumonisin B1** in feeds associated with animal health problems

AU Ross, P. F.; Rice, L. G.; Plattner, R. D.; Osweiler, G. D.; Wilson, T. M.; Owens, D. L.; Nelson, H. A.; Richard, J. L.

CS Anim. Plant Health Inspect. Serv., US Dept. Agric., Ames, IA, 50010, USA

SO Mycopathologia (1991), 114(3), 129-35

CODEN: MYCPAH; ISSN: 0301-486X

DT Journal

LA English

L10 ANSWER 16 OF 37 CA COPYRIGHT 2002 ACS

AB Leukoencephalomalacia (LEM) is a neurotoxic disease of Equidae caused by the ingestion of feed contaminated with *Fusarium moniliforme*. Feed samples from the United States that were fed to horses prior to the development of LEM were analyzed for **fumonisin B1** (FB1) and **fumonisin B2** (FB2), toxic secondary metabolites of *F. moniliforme*. In addn., FB1, FB2, and moniliformin were detd. in cultures of 10 isolates of *F. moniliforme* from these samples. None of the

cultures

produced moniliformin but all contained both FB1 (160-3800 .mu.g/g) and FB2 (20-950 .mu.g/g). All 14 feed samples contained both FB1 (1.3-27.0 .mu.g/g) and FB2 (0.1-12.6 .mu.g/g). FB1 was the major **fumonisin** in the cultures (80-96%) as well as in the feed samples (53-93%). These results support the finding that the **fumonisins** are causative

factors in the development of LEM in horses.

AN 114:41181 CA
TI Levels of **fumonisin** B1 and B2 in feeds associated with confirmed cases of equine leukoencephalomalacia
AU Thiel, Pieter G.; Shephard, Gordon S.; Sydenham, Eric W.; Marasas, Walter F. O.; Nelson, Paul E.; Wilson, Terrance M.
CS Res. Inst. Nutr. Dis., S. Afr. Med. Res. Council., Tygerberg, S. Afr.
SO J. Agric. Food Chem. (1991), 39(1), 109-11
CODEN: JAFCAU; ISSN: 0021-8561
DT Journal
LA English

L10 ANSWER 17 OF 37 CA COPYRIGHT 2002 ACS

AB A series of cultured mammalian cell lines were examd. to develop a more rapid and sensitive bioassay system, which may be useful for examg. structure-activity relationships and the mechanism(s) of action of a series of structurally related mycotoxins **fumonisin** B1 and B2 and AAL toxin. Of 9 rat hepatoma cell lines tested, all except the two most de-differentiated lines were sensitive to the three toxins, with a toxic response visible by 48 h. Approx. IC50 values for the most sensitive 100 .mu.L cultures. Among 15 cell lines from other sources, only MDCK dog kidney epithelial cells were sensitive (IC50 = 2.5, 2 and 5 .mu.g/mL, resp.). Studies in co-cultures of sensitive and insensitive cell lines and in cultures of a sensitive cell line over a range of cell densities indicated that cytotoxicity of **fumonisin** B1 and B2 does not involve metabolite activation to a deriv. stable enough to diffuse to adjacent cells.

AN 116:77941 CA
TI Toxicity of the mycotoxins **fumonisin** B1 and B2 and *Alternaria alternata* f. sp. *lycopersici* toxin (AAL) in cultured mammalian cells
AU Shier, W. T.; Abbas, H. K.; Mirocha, C. J.
CS Dep. Med. Chem., Univ. Minnesota, St. Paul, MN, 55108, USA
SO Mycopathologia (1991), 116(2), 97-104
CODEN: MYCPAH; ISSN: 0301-486X
DT Journal
LA English

L10 ANSWER 18 OF 37 CA COPYRIGHT 2002 ACS

AB The mutagenic behavior of two potentially carcinogenic mycotoxins produced

by *F. moniliforme* was investigated in the *Salmonella* mutagenicity test using tester strains TA97a, TA98, TA100, and TA102. The mutagenic response obtained with fusarin C (1, 5, and 10 .mu.g/plate) against tester

strains TA98 and TA100 in the presence of microsomal activation confirmed previous observations on the mutagenic behavior of this mutagen whereas that obtained against TA97a is reported for the first time. No dose-response relationship could be detected for the concn. levels (0.2, 0.5, 1, 5, 10 mg/plate) tested for **fumonisin** B1 (FB1), FB2, and FB3 against any of the tester strains used in either the plate incorporation and/or the preincubation tests. A cytotoxic effect was obtained at concn. levels of 5 and 10 mg/plate in the absence of the microsomal activation mixt. From the studies it became evident that *F. moniliforme* produces two compds., a mutagenic compd., fusarin C which has been shown to lack carcinogenic activity in rats, and the nonmutagenic **fumonisin** B mycotoxins of which FB1 is known to be responsible for the hepatocarcinogenicity of the fungus in rats.

AN 116:209470 CA
TI Mutagenicity of potentially carcinogenic mycotoxins produced by *Fusarium moniliforme*

AU Gelderblom, W. C. A.; Snyman, S. D.
CS Res. Inst. Nutr. Dis., Tygerberg, 7505, S. Afr.
SO Mycotoxin Res. (1991), 7(2), 46-52
CODEN: MYREET; ISSN: 0178-7888
DT Journal
LA English

L10 ANSWER 19 OF 37 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AB Ten different isolates of the common corn fungus, *Fusarium moniliforme*, were cultured on corn, and the production by the isolates of two important

mycotoxins, fusarin C and **fumonisin B1**, was compared.

Additionally, both aqueous and organic extracts of the cultures were tested for cytotoxicity to rat primary hepatocytes by measuring the effects of three dose levels on the ability of the cells to take up

valine

and to cause the release of the cytoplasmic enzyme, lactate

dehydrogenase.

The fungal isolates differed drastically in their ability to produce the two mycotoxins and in their cytotoxicity. However the toxic effects could not be accounted for by the content of the two toxins measured. Therefore it appears that there are other toxins, both organic and aqueous soluble compounds, that are toxic to liver cells.

AN 1991:429248 BIOSIS

DN BA92:85413

TI DIFFERENTIAL CYTOTOXICITY AND MYCOTOXIN CONTENT AMONG ISOLATES OF *FUSARIUM-MONILIFORME*.

AU NORRED W P; BACON C W; PLATTNER R D; VESONDER R F

CS TOXICOLOGY MYCOTOXIN RES. UNIT, US DEP. AGRIC., AGRIC. RES. SERVICE, R.B. RUSSELL AGRIC. RES. CENTER, ATHENS, GA. 30613.

SO MYCOPATHOLOGIA, (1991) 115 (1), 37-43.

CODEN: MYCPAH. ISSN: 0301-486X.

FS BA; OLD

LA English

L10 ANSWER 20 OF 37 CA COPYRIGHT 2002 ACS

AB **Fumonisin B1** (FB1) and FB2 were isolated from corn cultures of both *F. moniliforme* and *F. proliferatum*. Resp. concns. in culture materials of FB1 and FB2 ranged from 960 to 2350 and 120 to 320 .mu.g/g for *F. moniliforme* and from 1670 to 2790 and 150 to 320 .mu.g/g for *F. proliferatum*. Thin-layer chromatog., gas chromatog.-mass spectroscopy, high-performance liq. chromatog., and liq. secondary ion mass spectroscopy were used for detection. **Fumonisins** from *F. proliferatum* have not previously been reported.

AN 113:227660 CA

TI Production of **fumonisins** by *Fusarium moniliforme* and *Fusarium proliferatum* isolates associated with equine leukoencephalomalacia and a pulmonary edema syndrome in swine

AU Ross, P. F.; Nelson, P. E.; Richard, J. L.; Osweiler, G. D.; Rice, L. G.; Plattner, R. D.; Wilson, T. M.

CS Anim. Plant Health Insp. Serv., Natl. Vet. Serv. Lab., Ames, IA, 50010, USA

SO Appl. Environ. Microbiol. (1990), 56(10), 3225-6

CODEN: AEMIDF; ISSN: 0099-2240

DT Journal

LA English

L10 ANSWER 21 OF 37 CA COPYRIGHT 2002 ACS

AB **Fumonisin B1** (I), a recently discovered mycotoxin, was synthesized by submerged cultures of *F. moniliforme* NRRL 13616 grown for

29 days at 28.degree. and 220 rpm in a basal salts medium (pH 5.0) supplemented with 90 g glucose and 3.5 g (NH₄)SO₄/L. Under these culture conditions, 74 .mu.g I/mL was produced by 29-day-old *F. moniliforme* NRRL 13616 cultures. I was detected in liq. culture exts. by HPLC. I was confirmed and quantitated by gas chromatog. and gas chromatog.-mass spectral anal. of the trimethylsilyl deriv. The use of a defined medium for producing I in a submerged culture facilitates its isolation and provides an excellent method for conducting biosynthetic studies.

AN 113:113750 CA

TI Production of **fumonisin B1** by *Fusarium moniliforme* NRRL 13616 in submerged culture

AU Jackson, Mark A.; Bennett, Glenn A.

CS North. Reg. Res. Cent., Agric. Res. Serv., Peoria, IL, 61604, USA

SO Appl. Environ. Microbiol. (1990), 56(8), 2296-8

CODEN: AEMIDF; ISSN: 0099-2240

DT Journal

LA English

L10 ANSWER 22 OF 37 CA COPYRIGHT 2002 ACS

AB **Fumonisin**s B1 (FB1) and B2 (FB2) were detd. by HPLC on an Ultracarb 7 ODS column with pH 3 MeOH-0.1M NaH₂PO₄ (4:1) as mobile phase by utilizing precolumn derivatization with o-phthalaldehyde, isocratic elution, and fluorescence detection (excitation 335 nm, emission 440 nm) prior to anal.; sample exts. were purified on strong anion exchange cartridges. The method was used for the anal. of naturally contaminated corn and mixed horse feed samples, as well as fungal culture material,

for the presence of the mycotoxins. Detection limits are approx. 50 ng/g for FB1 and 100 ng/g for FB2. The method was highly reproducible and recoveries of the toxins from the purifn. steps were 99.5% and 85.9%, resp.

AN 113:229815 CA

TI Quantitative determination of **fumonisin**s B1 and B2 by high-performance liquid chromatography with fluorescence detection

AU Shephard, G. S.; Sydenham, E. W.; Thiel, P. G.; Gelderblom, W. C. A.

CS Res. Inst. Nutr. Dis., South African Med. Res. Council, Tygerberg, 7505, S.

Afr.

SO J. Liq. Chromatogr. (1990), 13(10), 2077-87

CODEN: JLCHD8; ISSN: 0148-3919

DT Journal

LA English

L10 ANSWER 23 OF 37 CA COPYRIGHT 2002 ACS

AB Moldy and healthy corn samples were collected from 2 opposing human esophageal cancer prevalence areas of the Transkei, southern Africa, during 1985, and screened mycol. The moldy corn samples were analyzed

for the presence of several *Fusarium* mycotoxins, including deoxynivalenol (DON), diacetoxyscirpenol (DAS), moniliformin (MON), nivalenol (NIV), T-2 toxin, zearalenone (ZEA), **fumonisin**s B1 (FB1) and B2 (FB2), and tricarballic acid [(TCA), a compd. present in the structures of the **fumonisin**s]. The healthy corn samples were screened for the presence of FB1 and FB2. High concns. of DON, MON, NIV, ZEA, FB1, and

FB2 were recorded in the moldy corn samples. Statistical correlations between the incidence of *Fusarium* species and mycotoxin levels, present in the corn samples, agreed with the toxin-producing abilities of the individual *Fusarium* species. Addnl. data clearly indicated that significantly higher

levels of both FB1 and FB2 were present in the healthy corn samples from the high esophageal cancer rate area than in corresponding samples from the low-rate area.

AN 113:151009 CA

TI Natural occurrence of some Fusarium mycotoxins in corn from low and high esophageal cancer prevalence areas of the Transkei, Southern Africa
AU Sydenham, Eric W.; Thiel, Pieter G.; Marasas, Walter F. O.; Shephard, Gordon S.; Van Schalkwyk, Dirk J.; Koch, Klaus R.

CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Council, Tygerberg, 7505, S. Afr.

SO J. Agric. Food Chem. (1990), 38(10), 1900-3

CODEN: JAFCAU; ISSN: 0021-8561

DT Journal

LA English

L10 ANSWER 24 OF 37 CA COPYRIGHT 2002 ACS

AB The kinetics of the prodn. of **fumonisin B1** (FB1) by *F. moniliforme* MRC 826 in corn cultures was investigated as a function of fungal growth at various incubation temps. The growth rate of *F. moniliforme*, as measured by ergosterol concn., was higher at 25.degree. than at 20.degree., reaching a stationary phase after 4 to 6 wk in both cases. FB1 prodn. commenced after 2 wk during the active growth phase, continued to increase during the stationary phase, and decreased after 13 wk. The overall maximal yield of FB1 (17.9 g/kg, dry wt.) was obtained

in

corn cultures incubated at 20.degree. for 13 wk, but it was significantly higher than the max. yield (16.5 g/kg, dry wt.) obtained at 25.degree. after 11 wk. However, a significantly higher mean yield was detected at 25.degree. (9.5 g/kg, dry wt.) than at 20.degree. (8.7 g/kg, dry wt.). Prodn. reached a plateau after 7 wk of incubation at 25.degree. or 9 wk

of

incubation at 20.degree.. The maximal prodn. of FB1 at 30.degree. was very low (0.6 g/kg, dry wt.). FB1 was also found to be heat stable, as there was no redn. in the FB1 concn. after boiling culture material of *F. moniliforme* MRC 826.

AN 113:55648 CA

TI Effects of temperature and incubation period on production of **fumonisin B1** by *Fusarium moniliforme*

AU Alberts, J. F.; Gelderblom, W. C. A.; Thiel, P. G.; Marasas, W. F. O.;
Van

Schalkwyk, D. J.; Behrend, Y.

CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Council, Tygerberg, 7505, S. Afr.

SO Appl. Environ. Microbiol. (1990), 56(6), 1729-33

CODEN: AEMIDF; ISSN: 0099-2240

DT Journal

LA English

L10 ANSWER 25 OF 37 CA COPYRIGHT 2002 ACS

AB **Fumonisin B1** and B2, members of a new class of mycotoxins, were measured in culture material of *Fusarium moniliforme* MRC826 and in two corn samples assocd. with field cases of equine leukoencephalomalacia. The compds. were detected by thin-layer chromatog.

with confirmation by liq. secondary ion-mass spectrometry and by gas chromatog./mass spectrometry. Ref. stds. were isolated from cultures of *F. moniliforme* on corn. The level of **fumonisin B1** was about 600 mg/kg in the culture material and 150 and 20 mg/kg in the two naturally contaminated samples.

AN 115:2884 CA

TI A method of detection of **fumonisin**s in corn samples associated
 with field cases of equine leukoencephalomalacia
 AU Plattner, Ronald D.; Norred, William P.; Bacon, Charles W.; Voss, Kenneth
 A.; Peterson, Robert; Shackelford, Darcy D.; Weisleder, David
 CS North. Reg. Res. Cent., Agric. Res. Serv., Peoria, IL, 61604, USA
 SO Mycologia (1990), 82(6), 698-702
 CODEN: MYCOAE; ISSN: 0027-5514
 DT Journal
 LA English

L10 ANSWER 26 OF 37 MEDLINE
 AN 91249017 MEDLINE
 DN 91249017 PubMed ID: 2095286
 TI A mycological evaluation and in vivo toxicity evaluation of feed from 41
 farms with equine leukoencephalomalacia.
 AU Wilson T M; Nelson P E; Marasas W F; Thiel P G; Shephard G S; Sydenham E
 W; Nelson H A; Ross P F
 CS US Department of Agriculture, National Veterinary Services Laboratories,
 Ames, IA 50010.
 SO JOURNAL OF VETERINARY DIAGNOSTIC INVESTIGATION, (1990 Oct) 2 (4)
 352-4.
 Journal code: A2D; 9011490. ISSN: 1040-6387.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199107
 ED Entered STN: 19910728
 Last Updated on STN: 19910728
 Entered Medline: 19910709

L10 ANSWER 27 OF 37 CA COPYRIGHT 2002 ACS
 AB Fusarium moniliforme, a common fungal contaminant of corn, was recently
 shown to produce a group of mycotoxins, the **fumonisin**s, in
 culture. Moldy home-grown corn collected from an area of the Transkei,
 southern Africa, was analyzed for the presence of the **fumonisin**
 mycotoxins. **Fumonisin B1** was detected in the sample
 ext., as independently prep'd. derivs., by 2 HPLC procedures. A capillary
 gas chromatog.-mass spectrometric procedure was used to confirm the
 identity of the tricarballic acid moiety, present in the esterified
 hydrolyzates of the **fumonisin**s. This is the 1st conclusive
 report of the natural occurrence of **fumonisin B1** in
 corn.
 AN 112:53904 CA
 TI Evidence for the natural occurrence of **fumonisin B1**, a
 mycotoxin produced by Fusarium moniliforme, in corn
 AU Sydenham, Eric W.; Gelderblom, Wentzel C. A.; Thiel, Pieter G.; Marasas,
 Walter F. O.
 CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Counc., Tygerberg, 7505, S.
 Afr.
 SO J. Agric. Food Chem. (1990), 38(1), 285-90
 CODEN: JAFCAU; ISSN: 0021-8561
 DT Journal
 LA English

L10 ANSWER 28 OF 37 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 AB Leukoencephalomalacia (LEM) was induced by the oral administration of
fumonisin B1 (FB1) to 2 horses: a filly received 59,5
 mg/kg of a 50% preparation of FB1, administered in 21 doses of 1,25-4
 mg/kg over 33 days; a colt, 44,3 mg/kg of 95% pure FB1 in 20 doses of 1-4

mg/kg in 29 days. Both animals developed nervous signs such as apathy, changes in temperament, inco-ordination, walking into objects, and one showed paralysis of the lips and tongue. Characteristic lesions of LEM were present in the brains. These trials proved conclusively that FB1 can induce LEM in horses.

AN 1991:325320 BIOSIS
DN BA92:35835
TI LEUKOENCEPHALOMALACIA IN TWO HORSES INDUCED BY ORAL DOSING OF
FUMONISIN B-1.
AU KELLERMAN T S; MARASAS W F O; THIEL P G; GELDERBLOM W C A; CAWOOD M;
COETZER J A W
CS VETERINARY RES. INST., ONDERSTEPSPOORT 0110, SOUTH AFRICA.
SO ONDERSTEPSPOORT J VET RES, (1990) 57 (4), 269-276.
CODEN: OJVRAZ. ISSN: 0030-2465.
FS BA; OLD
LA English

L10 ANSWER 29 OF 37 MEDLINE

AB Fusarium moniliforme (FM) is associated with equine leukoencephalomalacia (ELEM) and hepatotoxicities in horses and rats. The neurochemical effects of ELEM-associated corn naturally infected with FM and FM strain MRC 826 were studied in rats. Increases in brain 5-hydroxyindoleacetic acid (5-HIAA, major metabolite of serotonin, 5-HT) and 5-HIAA/5-HT ratios were observed in rats fed the ELEM-FM corn. These rats had reduced body

weights

(17%, P less than 0.01) and increased brain weight/body weight ratios (14%, P less than 0.01) as compared with controls that were fed

commercial

corn. Rats fed a rodent chow supplemented (16%, w/w) with corn cultures

of

FM (MRC 826) had brain 5-HT and 5-HIAA increased (11% and 60%, P less

than

0.01, respectively). At 20% FM (MRC 826)-chow diet, the 5-HIAA levels

were

increased (18%, P less than 0.01). In both the 16% and 20% diets, brain 5-HIAA/5-HT ratios were increased (45%, P less than 0.01 and 10%, P less than 0.05), body weights reduced (30% and 18%, P less than 0.01) and

brain

weight/body weight ratios increased (40% and 16%, P less than 0.01), respectively. The incidences of microscopic liver lesions (particularly bile duct proliferations, hepatocellular hyperplasia, and focal necrosis) were consistent with rats fed the FM contaminated and FM-fortified diets. These results suggest a possible FM (ELEM-associated)-induced dysfunction in either 5-HT metabolism or 5-HIAA elimination in rat brains.

AN 90287897 MEDLINE
DN 90287897 PubMed ID: 1972578
TI Effects of Fusarium moniliforme and corn associated with equine leukoencephalomalacia on rat neurotransmitters and metabolites.
AU Porter J K; Voss K A; Bacon C W; Norred W P
CS Richard B. Russell Agricultural Research Center, U.S. Department of Agriculture, Agriculture Research Service, Athens, Georgia 30613.
SO PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE, (1990 Jul) 194 (3) 265-9.
Journal code: PXZ; 7505892. ISSN: 0037-9727.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199007
ED Entered STN: 19900824

Last Updated on STN: 19950206
Entered Medline: 19900720

- L10 ANSWER 30 OF 37 MEDLINE
AB Pulmonary edema and hydrothorax were observed in mature swine that died approximately 5 days after consuming corn screenings. These postmortem observations were reproduced in younger swine (16-24 kg) that died within 1 week when fed the corn screenings under experimental conditions. Additionally, pulmonary edema and hydrothorax occurred in a pig (7.1 kg) that died after receiving 4 daily intravenous injections of **fumonisin B1**. A fungus was isolated from the corn screenings that is identical to *Fusarium moniliforme* MRC-826 in colony morphology and under microscopic examination.
- AN 91242753 MEDLINE
DN 91242753 PubMed ID: 2094448
TI Pulmonary edema and hydrothorax in swine produced by **fumonisin B1**, a toxic metabolite of *Fusarium moniliforme*.
AU Harrison L R; Colvin B M; Greene J T; Newman L E; Cole J R Jr
CS Veterinary Diagnostic and Investigational Laboratory, University of Georgia, Tifton 31794.
SO JOURNAL OF VETERINARY DIAGNOSTIC INVESTIGATION, (1990 Jul) 2 (3) 217-21.
Journal code: A2D; 9011490. ISSN: 1040-6387.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199107
ED Entered STN: 19910719
Last Updated on STN: 19910719
Entered Medline: 19910702
- L10 ANSWER 31 OF 37 MEDLINE
AB During the fall of 1989, an episode of equine leukoencephalomalacia involved 18 of 66 purebred Arabian horses at a breeding/training stable in Arizona. Of the 18 horses affected, the condition was fatal in 14. These horses, as well as 48 unaffected horses, had been fed a diet containing a substantial amount of white corn screenings. Gross pathologic findings included liquefactive necrosis in parts of the cerebral white matter and hemorrhagic foci of various sizes in the brain stem. Histopathologic findings included rarefied white matter with pyknotic nuclei and eosinophilic cytoplasm. Thin-layer chromatography, high-performance liquid chromatography, and gas chromatography/mass spectroscopy were utilized to identify and quantitate **fumonisin B1** in 3 samples of corn from the farm. Concentrations of **fumonisin B1** range from 37 to 122 ppm. **Fumonisin B2** was also detected. Using information on diet, animal weights, and feeding practices, estimates of total **fumonisin B1** dosage were determined. This is the first definitive report on equine leukoencephalomalacia and associated **fumonisin B1** concentrations.
- AN 91242752 MEDLINE
DN 91242752 PubMed ID: 2094447
TI **Fumonisin B1** levels associated with an epizootic of equine leukoencephalomalacia.
AU Wilson T M; Ross P F; Rice L G; Osweiler G D; Nelson H A; Owens D L; Plattner R D; Reggiardo C; Noon T H; Pickrell J W
CS US Department of Agriculture, National Veterinary Services Laboratories, Ames 50010.

SO JOURNAL OF VETERINARY DIAGNOSTIC INVESTIGATION, (1990 Jul) 2 (3)
213-6.
Journal code: A2D; 9011490. ISSN: 1040-6387.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199107
ED Entered STN: 19910719
Last Updated on STN: 19910719
Entered Medline: 19910702

L10 ANSWER 32 OF 37 CA COPYRIGHT 2002 ACS
AB A method is described to isolate **fumonisin B1** (FB1) from corn cultured for 18 days at 25.degree. with *Fusarium moniliforme*. Cultured corn was extd. with aq. methanol and purified with XAD-2 column chromatog. and high performance liq. chromatog. (HPLC). About 450 mg of FB1 were obtained from 800 g cultured corn. Its identity was established by fast-atom bombardment (FAB) mass spectrometry, and IR spectrum and nuclear magnetic spectrum. Its purity was estd. to be 95% by gas chromatog./mass spectrometry (GC/MS).
AN 115:110124 CA
TI **Fumonisin B1**: isolation from corn culture, and purification by high performance liquid chromatography
AU Vesonder, R.; Peterson, R.; Plattner, R.; Weisleder, D.
CS North. Reg. Res. Cent., Agric. Res. Serv., Peoria, IL, 61604, USA
SO Mycotoxin Res. (1990), 6(2), 85-8
CODEN: MYREET; ISSN: 0178-7888
DT Journal
LA English

L10 ANSWER 33 OF 37 CA COPYRIGHT 2002 ACS
AB *F. moniliforme* has been assocd. with several diseases, including equine leukoencephalomalacia, human esophageal cancer, and hepatotoxicity/hepatocarcinogenicity in lab. animals. The potential health risks to animals and humans posed by *F. moniliforme*-contaminated grains cannot be assessed until the toxins are identified and toxicol. evaluated. As part of a systematic approach to identifying the hepatotoxins produced by *F. moniliforme*, diets contg. aq. and chloroform/methanol (1:1) exts. of *F. moniliforme* strain MRC 826 culture material (CM) and/or the extd. CM residues were fed to male Sprague-Dawley rats for four weeks. Serum alanine aminotransferase, aspartate aminotransferase, and alk. phosphatase activities were increased after two and four weeks, and microscopic liver lesions were found in those animals fed aq. CM ext. and the CM residue after chloroform/methanol extn. **Fumonisin B1** and **B2** were extd. from the CM by water, but not chloroform/methanol, and were present in the toxic diets at concns. of 93-139 and 82-147 ppm, resp. Nontoxic diets contained .ltoreq.22 ppm **fumonisin B1** and .ltoreq.65 ppm **fumonisin B2**.
AN 115:24074 CA
TI Comparative studies of hepatotoxicity and **fumonisin B1** and **B2** content of water and chloroform/methanol extracts of *Fusarium moniliforme* strain MRC 826 culture material
AU Voss, Kenneth A.; Plattner, Ronald D.; Bacon, Charles W.; Norred, William P.
CS Toxicol. Mycotoxin Res. Unit, Agric. Res. Serv., Athens, GA, 30613, USA
SO Mycopathologia (1990), 112(2), 81-92
CODEN: MYCPAH; ISSN: 0301-486X

DT Journal
LA English

L10 ANSWER 34 OF 37 CA COPYRIGHT 2002 ACS

AB A bioassay was developed to det. the potential toxicity of corn naturally contaminated with *Fusarium moniliforme*. Two groups of five male Sprague-Dawley rats were each fed one of two *F. moniliforme*-contaminated corn samples, designated CS-1 and CS-2, that were assocd. with sep. field cases of equine leukoencephalomalacia. A control group, also consisting of 5 male rats, was fed uncontaminated seed corn. All animals survived

to

the end of the study, and there were no apparent differences in appearance

or behavior among groups. Wt. loss and irregular food consumption occurred in all groups and probably resulted from nutritional deficiencies

inherent in the corn diets. Hepatocellular degeneration, necrosis and hyperplasia as well as biliary hyperplasia were found in the test groups only and were attributed to *F. moniliforme*. Serum transaminase and alk. phosphatase activities in animals fed CS-1 and CS-2 for 4 wk were significantly increased compared with the controls, while serum bilirubin concn. was increased only in the CS-1 group. Tubular nephrosis was also present in the renal cortex of all animals fed CS-1 and CS-2. These effects may have been related to **fumonisin** B1 and B2, recently discovered metabolites of *F. moniliforme*, that were found in both CS-1

and

CS-2. Short-term studies of this type may be useful in screening naturally-contaminated grains and other materials for hepatotoxic metabolites produced by *F. moniliforme*.

AN 111:22330 CA

TI Hepatotoxicity and renal toxicity in rats of corn samples associated with field cases of equine leukoencephalomalacia

AU Voss, K. A.; Norred, W. P.; Plattner, R. D.; Bacon, C. W.

CS Richard B. Russell Agric. Res. Cent., Agric. Res. Serv., Athens, GA, 30613, USA

SO Food Chem. Toxicol. (1989), 27(2), 89-96

CODEN: FCTOD7; ISSN: 0278-6915

DT Journal

LA English

L10 ANSWER 35 OF 37 CA COPYRIGHT 2002 ACS

AB Culture material of *F. moniliforme* isolate exhibits cancer-promoting activity in a short-term cancer initiation-promotion bioassay with diethylnitrosamine-initiated rats and induces .gamma.-glutamyltranspeptidase-pos. (GGT+) foci as an endpoint after 4 wk of promotion. This bioassay was used as a monitoring system to isolate cancer-promoting compds. from cultures of *F. moniliforme* MRC 826.

Culture

material was successively extd. with Et acetate and MeOH-H₂O (3:1). Most of the cancer-promoting activity was recovered in the MeOH-H₂O ext. and remained in the aq. phase following partitioning of this ext. between MeOH-H₂O (1:3) and CHCl₃. The MeOH-H₂O fraction was chromatographed on

an

Amberlite XAD-2 column, and the active fraction was eluted with MeOH. This fraction was chromatographed on a silica gel column with CHCl₃-MeOH-MeCO₂H (6:3:1) as eluent and further purified on a C18 reverse-phase column. Two pure compds. were isolated, and these have

been

chem. characterized and given the trivial names **fumonisin** B1 and B2. At least 2 g of the major compd. **fumonisin**

- B1** was purified from 1 kg of culture material. **Fumonisin B1** in the diet (0.1%) significantly induced the formation of GGT+ foci in the livers of initiated as well as noninitiated rats. The cancer-promoting effect of **fumonisin B1** in rats was assocd. with a toxic effect, as evidenced by a significant redn. in wt. gain during the 4-wk promoting treatment. The principal pathol. change
- in rats treated with **fumonisin B1** was an insidious and progressive toxic hepatitis similar to that induced by toxic culture material of *F. moniliforme* MRC 826.
- AN 109:124164 CA
 TI **Fumonisin**s-novel mycotoxins with cancer-promoting activity produced by *Fusarium moniliforme*
 AU Gelderblom, W. C. A.; Jaskiewicz, K.; Marasas, W. F. O.; Thiel, P. G.; Horak, R. M.; Vleggaar, R.; Kriek, N. P. J.
 CS Res. Inst. Nutr. Dis., South Afr. Med. Res. Council, Tygerberg, 7505, S. Afr.
 SO Appl. Environ. Microbiol. (1988), 54(7), 1806-11
 CODEN: AEMIDF; ISSN: 0099-2240
 DT Journal
 LA English
- L10 ANSWER 36 OF 37 CA COPYRIGHT 2002 ACS
 AB The structures of the **fumonisins**, a family of structurally related mycotoxins isolated from cultures of *F. moniliforme*, were elucidated by mass spectrometry and ¹H and ¹³C NMR spectroscopy as the diester of propane-1,2,3-tricarboxylic acid and either 2-acetylamino- or 2-amino-12,16-dimethyl-3,5,10,14,15-pentahydroxyicosane as well as in each case the C-10 deoxy analog; in all cases both the C-14 and C-15 hydroxy groups are involved in ester formation with the terminal carboxy group of propane-1,2,3-tricarboxylic acid.
- AN 109:207957 CA
 TI Structure elucidation of the **fumonisins**, mycotoxins from *Fusarium moniliforme*
 AU Bezuidenhout, S. Catherine; Gelderblom, Wentzel C. A.; Gorst-Allman, Charles P.; Horak, R. Marthinus; Marasas, Walter F. O.; Spiteller, Gerhard; Vleggaar, Robert
 CS Natl. Chem. Res. Lab., CSIR, Pretoria, 0001, S. Afr.
 SO J. Chem. Soc., Chem. Commun. (1988), (11), 743-5
 CODEN: JCCCAT; ISSN: 0022-4936
 DT Journal
 LA English
- L10 ANSWER 37 OF 37 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 AB Each of two horses was dosed by stomach tube with culture material on maize of *Fusarium moniliforme* MRC 826. One horse developed severe hepatosis and mild oedema of the brain after 6 doses of 2.5 g of culture material/kg body mass/day in 7 days. The second horse, in a similar experiment but at a dosage rate of 1.25 g/kg/day, developed mild hepatosis and moderate oedema of the brain. In both animals the brain oedema was particularly noticeable in the medulla oblongata. The mycotoxin **fumonisin B1** was extracted and purified from the culture material of *F. moniliforme* MRC, 826 which contained approximately 1 g/kg of this compound. A horse was injected intravenously 7 times from Day 0-Day 9 with 0.125 mg of **fumonisin B1**/kg body mass/day. Clinical signs of neurotoxicosis, which appeared on Day 8, included nervousness followed by apathy, a wide-based stance, trembling, ataxia, reluctance to move, paresis of the lower lip and tongue, and an

10 inability to eat or drink. Euthanasia was performed on the horse on Day
 while the animal was in a tetanic convulsion. The principal lesions were
 severe oedema of the brain and early, bilaterally symmetrical, focal
 necrosis in the medulla oblongata. This report provides experimental
 evidence that **fumonisin B1**, produced by *F. moniliforme*, causes equine leukoencephalomalacia.

AN 1989:274863 BIOSIS
 DN BA88:10945
 TI LEUKOENCEPHALOMALACIA IN A HORSE INDUCED BY **FUMONISIN B-1**
 ISOLATED FROM *FUSARIUM-MONILIFORME*.
 AU MARASAS W F O; KELLERMAN T S; GELDERBLUM W C A; COETZER J A W; THIEL P G;
 VAN DER LUGT J J
 CS S. AFR. MED. RES. COUNCIL, P.O. BOX 70, TYGERBERG 7505, S. AFR.
 SO ONDERSTEEPOORT J VET RES, (1988) 55 (4), 197-204.
 CODEN: OJVRAZ. ISSN: 0030-2465.
 FS BA; OLD
 LA English

=> d his

(FILE 'HOME' ENTERED AT 15:20:51 ON 07 MAY 2002)

FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 15:21:17 ON 07 MAY 2002

L1 3475 S FUMONISIN?
 L2 428 S SPHINGOLIPID (P) L1
 L3 99 S L1 AND 1960-1991/PY
 L4 55 DUP REM L3 (44 DUPLICATES REMOVED)
 L5 37 S FUMONISIN B1 AND L4
 L6 37 S (FUMONISIN B1) AND L4
 L7 12467349 S ADMIN? OR TOPICAL? OR ORAL? OR PATIENT? OR CONSUM? OR
 INJECT?
 L8 18 S L7 (P) L4
 L9 18 DUP REM L8 (0 DUPLICATES REMOVED)
 L10 37 DUP REM L6 (0 DUPLICATES REMOVED)

=> d his

(FILE 'HOME' ENTERED AT 15:20:51 ON 07 MAY 2002)

FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 15:21:17 ON 07 MAY 2002

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L3	99 S L1 AND 1960-1991/PY
L4	55 DUP REM L3 (44 DUPLICATES REMOVED)
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L6	37 S (FUMONISIN B1) AND L4
L7	12467349 S ADMIN? OR TOPICAL? OR ORAL? OR PATIENT? OR CONSUM? OR INJECT?
L8	18 S L7 (P) L4
L9	18 DUP REM L8 (0 DUPLICATES REMOVED)
L10	37 DUP REM L6 (0 DUPLICATES REMOVED)

=>

WEST

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L11: Entry 22 of 41

File: USPT

Nov 23, 1999

DOCUMENT-IDENTIFIER: US 5990390 A

TITLE: Methods and compositions for the production of stably transformed, fertile monocot plants and cells thereof

Brief Summary Paragraph Right (117):

Production of mycotoxins, including aflatoxin and fumonisin, by fungi associated with monocotyledonous plants such as maize is a significant factor in rendering the grain not useful. These fungal organisms do not cause disease symptoms and/or interfere with the growth of the plant, but they produce chemicals (mycotoxins) that are toxic to animals. It is contemplated that inhibition of the growth of these fungi would be reduce the synthesis of these toxic substances and therefore reduce grain losses due to mycotoxin contamination. It is also proposed that it may be possible to introduce novel genes into monocotyledonous plants such as maize that would inhibit synthesis of the mycotoxin without interfering with fungal growth. Further, it is contemplated that expression of a novel gene which encodes an enzyme capable of rendering the mycotoxin nontoxic would be useful in order to achieve reduced mycotoxin contamination of grain. The result of any of the above mechanisms would be a reduced presence of mycotoxins on grain.



Generate Collection

Print

L11: Entry 19 of 41

File: USPT

Feb 15, 2000

DOCUMENT-IDENTIFIER: US 6025545 A

TITLE: Methods and compositions for the production of stably transformed, fertile monocot plants and cells thereof

Brief Summary Paragraph Right (100):

Production of mycotoxins, including aflatoxin and fumonisin, by fungi associated with monocotyledonous plants such as maize is a significant factor in rendering the grain not useful. These fungal organisms do not cause disease symptoms and/or interfere with the growth of the plant, but they produce chemicals (mycotoxins) that are toxic to animals. It is contemplated that inhibition of the growth of these fungi would be reduce the synthesis of these toxic substances and therefore reduce grain losses due to mycotoxin contamination. It is also proposed that it may be possible to introduce novel genes into monocotyledonous plants such as maize that would inhibit synthesis of the mycotoxin without interfering with fungal growth. Further, it is contemplated that expression of a novel gene which encodes an enzyme capable of rendering the mycotoxin nontoxic would be useful in order to achieve reduced mycotoxin contamination of grain. The result of any of the above mechanisms would be a reduced presence of mycotoxins on grain.